REPORT RESUMES

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THE NEW YORK COLLEGE PROFICIENCY EXAMINATION PROGRAM.
STATE UNIV. OF N.Y., ALBANY
NEW YORK STATE EDUCATION DEPT., ALBANY
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DESCRIPTORS- *COLLEGE CREDITS, *EQUIVALENCY TESTS, *INDEPENDENT STUDY, *UNITS OF STUDY (SUBJECT FIELDS), *ADMINISTRATIVE POLICY, TEACHER CERTIFICATION, DEGREE REQUIREMENTS, GRADES (SCHOLASTIC), SPECIAL DEGREE PROGRAMS, NEW YORK STATE,

THE NEW YORK STATE COLLEGE PROFICIENCY EXAMINATION PROGRAM (CPE) WAS ESTABLISHED BY THE STATE EDUCATION DEPARTMENT TO OPEN UP THE STATE'S EDUCATIONAL OPPORTUNITIES TO THOSE WHO HAD ACQUIRED COLLEGE-LEVEL KNOWLEDGE IN WAYS OTHER THAN THROUGH REGULAR CLASSROOM ATTENDANCE. FACULTY MEMBERS OF COLLEGES AND UNIVERSITIES IN NEW YORK STATE, WORKING IN COMMITTEES, DRAW UP EXAMINATION SPECIFICATIONS, WRITE EXAMINATION QUESTIONS, RATE CANDIDATES' ANSWERS TO THOSE QUESTIONS, AND DETERMINE LEVELS OF PERFORMANCE NEEDED TO ACHIEVE SATISFACTORY CPE GRADES. THE STATE EDUCATION DEPARTMENT ITSELF DOES NOT GRANT COURSE CREDIT. THIS IS LEFT TO THE INDIVIDUAL EDUCATIONAL INSTITUTION TO DO, OR NOT TO DO, IN A MANNER CONSISTENT WITH ITS STANDARDS. HOWEVER, SATISFACTORY PERFORMANCE ON A CPE WILL BE ACCEPTED BY THE STATE EDUCATION DEPARTMENT IN LIEU OF SPECIFIC COURSE REQUIREMENTS FOR TEACHER CERTIFICATION. THIS DOCUMENT PRESENTS THE BACKGROUND OF THE PROGRAM, QUESTIONS AND ANSWERS ABOUT IT, POLICY STATEMENTS OF NEW YORK COLLEGES AND UNIVERSITIES REGARDING CPE, AND A DESCRIPTION OF EACH EXAMINATION INCLUDING MATERIAL COVERED AND OBJECTIVES TESTED. SPECIAL ADULT DEGREE PROGRAMS ARE LISTED. (AJ)

ED017858

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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THE NEW YORK

College
Proficiency
Examination
Program

AC002136

The University of the State of New York
The State Education Department/Albany

THE UNIVERSITY OF THE STATE OF NEW YORK

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The New York College Proficiency Examination Program

The University of the State of New York
The State Education Department
Albany

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A large number of students are now doing college-level work by independent study and in television courses, adult education courses, courses at industrial plants, and other courses outside regular college curriculums. One great difficulty with these courses *is that they do not count* uniformly, if at all, toward the achievement of a college degree. Yet in many cases the subject matter studied is equivalent to that offered in a course in a regular college or university curriculum.

We can expect a great increase in the future in the number of students in educational activities other than full-time, day-student programs as the post-high-school-age population increases and the desire to do college work expands. Many of these students will be engaged in high-quality study, and WE PROPOSE that a program be established by the Regents which would permit students to acquire regular college credit for their achievements without regular attendance at formal college classes.

Meeting the Increasing Demand for Higher Education in New York State
Report of the Committee on Higher Education—November 1960

Committee:
Marion B. Folsom
John W. Gardner
Henry T. Heald, Chairman

Contents

PAGE
Background of the Program 1
Questions and answers about the Program 3
Suggested Study Aids 13
Special Adult Degree Programs 17
Examination Descriptions
  General Information 19
  Accounting 21
  American Education, History of 23
  American Government 25
  American History 27
  American Literature 30
  Anthropology A 36
  Anthropology B 41
  Applied Music 45
  Biology 47
  Calculus A 56
  Calculus B 58
  Chemistry 62
  Criminology 65
  Earth Science 67
  Economics 69
  Educational Psychology 71
  Engineering Graphics A 73
  Engineering Graphics B 74
  European History 76
  Foreign Languages 79
  Freshman English 80
  Geology 86
  Nursing Sciences
    Maternal-Child Nursing 88
    Medical-Surgical Nursing 90
    Psychiatric-Mental Health Nursing 92

Contents—continued

PAGE
- Philosophy of Education 95
- Physics 97
- Shakespeare 99
- Sociology 101
- Statistics 103
- Tests and Measurements 107
- Western Civilization 109

Policy Statements 112
Tables 114

Background

The New York State College Proficiency Examination Program was established by the State Education Department in an effort to open up the educational opportunities of the State to individuals who had acquired college-level knowledge in ways other than through regular classroom attendance. Such individuals were not new in our society and, indeed, some colleges had for some years followed examining procedures which would allow the person who lacked formal college course work in a subject to demonstrate his competency in that subject. However, the concept of credit-by-examination was not a widely implemented one in the more than 200 higher institutions in New York State.

The State Education Department, after much counsel with college administrators and faculty, was convinced of the need for and assured of much support from the academic community of the State for such a program. Although the program that resulted from these earlier deliberations is coordinated by the New York State Education Department, the academic standards reflected in the examinations are determined by outstanding faculty members from campuses across the State. At present, for example, there are almost 200 college faculty members who serve as consultants to the program. These consultants, working in committees, draw up examination specifications, write examination questions, rate candidates' answers to those questions and, most important, determine levels of performance on the examinations needed to achieve satisfactory (or better) CPE grades. The New York State College Proficiency Examination Program, then, is truly a college-level examining program which is founded in the colleges and universities of New York State.

It was reasonable that the State Education Department looked to the colleges and universities of New York State for guidance in developing the College Proficiency Examination Program. It would be those very colleges and universities which would be granting credit to the person who did well on a CPE. The State Education Department itself does not grant course credit. This is left to the individual higher institution to do, or not to do, in a manner most consistent with its particular standards. The variety of approaches that the colleges and universities of the State have taken towards CPEP is a reflection of this basic principle. (See pages 112-135 for the specific policies of higher institutions regarding the granting of credit.)

A logical extension of the credit-by-examination concept is the utilization of College Proficiency Examinations in the teacher certification process in New York State. An individual applying to the State Education Department for certification may present satisfactory performance on a College Proficiency Examination in lieu of specific course requirements which may be lacking in his educational background.

It should be noted that the individual who wishes to be certified to teach in the public schools in New York State *must first possess the baccalaureate degree or its equivalent.* (For further information on State teacher certification procedures and licensure procedures in New York City see page 11.)

May Anyone Take College Proficiency Examinations?

Yes, if he believes he is proficient in one or more of the fields of college study for which examinations have been developed. It is not necessary to be a New York State resident to take a CPE. However, the examinations are only administered in New York State.

Who Is Helped by College Proficiency Examinations?

CPE's can help individuals of widely varying backgrounds, experience, and interests. Some of the many possibilities are:

— The adult who has mastered a subject through self-study, on the job experience, in an industrial training program, in a noncollegiate business or trade school, through an off-campus television course, programmed or recorded lesson, correspondence course, public school adult education, and other noncredit study

— The individual who has already completed her undergraduate studies but still lacks specific courses to complete requirements for a New York State teaching certificate or for a New York City teaching license

— The member of the armed services, Peace Corps, and other overseas service or business organizations, who has gained experience and knowledge of the history, language, and culture of the area in which he served, or who has studied college subjects while abroad

— The undergraduate wishing to pursue independent study

— The foreign student whose academic achievements abroad cannot be readily evaluated for credit in U. S. colleges

— The transfer student whose transcripts do not provide adequate basis for proper placement

— The student who seeks credit for summer or year-long foreign study, or for work and study in museums, industrial research laboratories, governmental agencies, business, and industry.

Can a Person Who Is Not Interested in College Credit Take College Proficiency Examinations?

Yes. Some people who take the examinations are interested primarily in evaluating their own learning achievement: others want to test the effectiveness of the programs of off-campus study they have pursued. Many seek formal recognition of their competencies in order to achieve personal and professional advancement.

When Are College Proficiency Examinations Given?

CPE's are given in early January and in late May.

Proficiency examinations in the foreign languages are given four times a year for the Modern Language Association by the Educational Testing Service. Further information on the foreign language examinations can be obtained directly from the Educational Testing Service, Princeton, New Jersey 08540.

Where Are College Proficiency Examinations Given?

College Proficiency Examinations are given at college centers at the following locations in New York State:

Albany	SUNY at Albany
Binghamton	SUNY at Binghamton
Brookville (LI)	C. W. Post College
Buffalo	SUNY at Buffalo
Canton	SUATC at Canton
New Paltz	SUC at New Paltz
New York City	Hunter College
Plattsburgh	SUC at Plattsburgh
Rochester	The University of Rochester
Syracuse	Syracuse University

College Proficiency Examinations are not administered outside of New York State.

What Is the Fee To Take a College Proficiency Examination?

The fee for each examination is $15.

Are There Prerequisites for Taking the Examinations?

No. It is assumed that the best guide to an individual's grasp of a subject will be his performance on the examination itself.

Who Prepares College Proficiency Examinations?

Every CPE is at some point under the review and approval of a college faculty committee. In most subjects the faculty committees develop their own examinations under the direction of the State Education Department.

In the remaining subjects the examinations are obtained from other examining agencies. In these cases, however, no examination is adopted by the College Proficiency Examination Program until its use has been recommended by the faculty committee in that subject.

What Are the Examinations Like?

The examinations are designed to test not only the individual's factual knowledge, but also his ability to use that knowledge effectively. CPE's parallel in topics covered and objectives measured courses offered in colleges and universities of the State. Most are 3 hours in length.

The examinations vary in format and may include multiple choice, short answer, and essay and problem questions.

For a description of each examination see "Examination Descriptions," pages 19-111.

Are the Examinations Difficult?

College Proficiency Examinations are reasonably difficult and demanding examinations, as they must be, in order for colleges to recognize successful performance on them for credit. It should be remembered that college professors have regular contact with on-campus students and have many opportunities to gain an accurate sense of each student's capabilities. The applicant for credit by examination is evaluated just once through the examination. It is logical, then, that the person seeking credit by examination should be prepared to perform somewhat above the minimum expected for the on-campus student.

How Should a Person Prepare for the Examinations?

The candidate will be expected to achieve the same objectives as students in regular college courses and should prepare himself accordingly. In particular, since lectures and class discussions often provide the classroom student with important background information in addition to the material provided in texts and assigned readings, the CPE candidate should be sure that his reading is broad enough to provide full coverage of each subject.

Libraries and bookstores can provide help in locating good texts and bibliographies, including many fine paperbacks. College course outlines and study guides which can be purchased in most bookstores will also be helpful. For further suggestions, see pages 13-16.

What Is a Passing Grade on a CPE?

CPE's are graded according to a five letter scale: A, B, C, D, and F. Generally, colleges require that a minimum CPE grade of C be attained before credit will be granted. Some colleges require a CPE grade of B or better before they will grant credit.

For the candidate who possesses the bachelor's degree and wishes to use her CPE performance in lieu of specific course requirements for a New York State teaching certificate or a New York City teaching license, a CPE grade of C must be achieved. If the CPE grade is to be used to satisfy advanced course requirements for the permanent teaching certificate, a grade of B must be attained.

Is Credit Automatically Earned When a Passing CPE Grade Is Received?

No. The CPE grade is translated into actual course credit only when accepted by a college for credit toward a degree at that institution. *The New York State Education Department does not grant college credit.*

However, when an individual already has his baccalaureate degree and is completing specific course requirements for a New York State teaching certificate or a license in another profession, the State Education Department will accept satisfactory grades on appropriate CPE's in lieu of required course credits.

It should be noted that a person who applies directly to the State Education Department for a New York State teaching certificate or to the New York City Board of Examiners for a teaching license must process the baccalaureate degree. (See pages 10-11.)

How Many Credits Is Each Examination Worth?

The faculty committee which prepared each CPE has also recommended the amount of credit that should be granted by a college when a person passes the examination. The recommended credits for each CPE appear just below the title on each examination description (pages 19-111.)

These are *recommended* credits. The college is not required to give the applicant for credit the amount recommended by the committee nor, in fact, is the college limited to that amount if it feels that the person's examination performance deserves additional credit.

For the person who wishes to use his examination in lieu of course requirements for the teaching certificate in New York State or the teaching license in New York City, the number of credits recommended by the CPE committee will be accepted by the Teacher Certification Unit of the New York State Education Department and by the Board of Examiners of the New York City Board of Education.

Are Standards for Granting Credit the Same in All Colleges?

No. Each college sets its own standards, and standards do vary from college to college. Just as a high school graduate may be denied admission by one college and be admitted by another, so some colleges will refuse credit for examination performance that would be accepted by another college. Most higher institutions provide general indications of the levels of performance they expect (see page 114), but each also reserves the right to evaluate individually the candidate's performance on the examination.

Also, a college may sometimes not give credit, but instead waive a prerequisite or a required course. The student can then go on to a more advanced course in the subject or take an elective.

Each higher institution, and, in many cases, each academic unit and department within each institution, sets its own policies and standards for granting credit. Final decision on the granting of credit in individual cases will be made by those responsible for such matters in the institution.

A college will not ordinarily award credit in a subject at or below a level at which credit has already been earned by the student.

Is Credit by Examination as "Good" as Credit Earned on Campus?

Yes. The credit earned through examination carries as much value toward the degree as does the credit earned through formal course work.

Do Colleges Establish Any Other Requirements for Credit?

In most cases, requirements for credit are satisfied upon successful completion of the examination. However, a college may require additional proof of competence.

For example, laboratory experience is an integral part of introductory college science courses and colleges will expect the candidate to show that he has developed those abilities and skills usually learned through laboratory experience. These skills can to some extent be tested on a written examination but are best demonstrated in an actual laboratory situation. In biology, most colleges will expect the candidate to have had experience with living materials, as well as to have carried out appropriate field work. In chemistry, abilities acquired should include skill in manipulation (e.g., glass bending, assembly of apparatus; use of balance, burettes, volumetric glassware, etc.) in analysis of errors in experimentally measured quantities, in interpretation of data, and in design of experiments. In the social sciences the ability to write research papers, including knowledge of how to cite sources and to give credit for ideas and phrases of others, is an important objective in many college courses. A candidate for credit may be asked by a college to write a paper or otherwise present evidence that he has this ability.

How Much Credit May Be Earned by Examination?

As the individual credit-granting policy statements on page 114 show, colleges vary on the total amount of credit that may be earned by examination. In no case, however, can an individual earn all of the credits required for a degree without classroom attendance. In granting credit by examination, a college recognizes the value of independent and off-campus study. But it also wishes to be sure that the person receiving its degree has been exposed to some of the experiences that college attendance is uniquely equipped to give.

The New York State Board of Regents has recommended that no more than half of the credits required for a degree be granted on the basis of examination.

When Will Credit Be Awarded?

Colleges grant credit for successful examination performance only after the individual applies for admission as a full- or part-time student. Some will grant credit only provisionally at that time and will withhold full credit until the applicant successfully completes some study in residence.

When Should Credit Be Sought?

In most cases, the candidate should wait to apply for credit until he is ready to seek admission to a college for further study on campus. This means that an individual may take several examinations before he receives any credit. The State Education Department will keep records of CPE grades earned by an individual and report them to a college or other agency on request from the candidate. Since credit-granting policies of colleges differ, the candidate should study the credit policies of colleges (see page 114) and then consult the college of his choice for further information.

How Are CPE Grades Sent to Colleges or Other Agencies?

After a candidate has taken a CPE, he will be notified of his grade, usually within 90 days of the date of administration. At the time, and as part of the $15 examination fee, he may also request that his CPE grade be sent to a college or other agency. If he wishes to have more than one college or agency receive a report of his CPE grade, a charge of $2 will be made for each additional report.

There is no charge to have a CPE grade forwarded by the Office of the College Proficiency Examination Program to the Teacher Certification Unit of the New York State Education Department.

Is the Candidate's CPE Grade Kept Confidential?

Yes. A candidate's CPE record or any examination grade therein will not be released without the consent of the candidate.

May a College Review an Individual's CPE Examination Answers?

If a candidate has requested that his CPE grade be sent to a college it is assumed that he is willing to have the college inspect the essay or problem section of his answer booklet if the college so requests. A college, therefore, may request from the State Education Department a copy of a candidate's answers to the essay or problem section of the examination if the candidate has indicated to the CPE Program office that the college is to be a recipient of his CPE grade in that subject.

There is no charge to the college or the candidate for this service.

(A candidate's answers to the essay or problem section of a CPE will be kept no longer than two years after the CPE grade on that examination is first reported to the candidate.)

Is an Official Record Kept of an Individual's Grades?

Yes. Individual cumulative records of CPE grades are kept by the State Education Department.

May a Candidate Retake a CPE?

Yes, although for some subjects a year must elapse before permission is granted to retake the examinations in those subjects. This time requirement, however, depends on the subject. The candidate who is interested in retaking a CPE should write to the State Education Department for a more specific answer.

In no case will more than a year's time be required between examinations.

Can CPE's Aid in Meeting New York State Teacher Certification Requirements?

Yes. But it should be clearly understood that only the person who has the baccalaureate degree or its equivalent can be certified to teach in the public schools of New York State. In addition to the degree, there are other specific course requirements depending on the area and level for which the certificate is desired.

The college graduate who has not taken the required courses but has developed the required proficiency in other ways, may meet the specific certification requirements by successful performance on the appropriate CPE. The State Education Department will accept satisfactory CPE grades in lieu of course work to satisfy requirements in general education, in the teaching specialty, and in professional education. No CPE can replace the practice teaching requirement.

CPE's may also be used by an already certified teacher to meet some requirements for permanent certification, or to extend her certificate to a second subject.

The Department's Division of Teacher Education and Certification handles all requests for certification and will evaluate the college credentials of a college graduate who wishes to be certified to teach in the public schools. The person who is interested in such an evaluation and has received her degree from an American college or university should request "Application for Certificate." The individual who has received her degree from an institution outside the United

States should request "Form F, Application for Evaluation of Foreign Credentials." Both forms may be obtained from

The Division of Teacher Education and Certification
State Education Department
800 North Pearl Street
Albany, New York 12204

Can Some Requirements for a New York City Teaching License Be Met Through CPE?

Yes, in much the same manner that successful performance on CPE's can be used to satisfy New York State certification requirements. However, the person who is interested in obtaining the New York City teaching license should get more specific information from

The Board of Examiners
Board of Education of the City of New York
110 Livingston Street
Brooklyn, New York 11201

Are the Examinations Recognized in Other States?

The College Proficiency Examination Program has been developed as a service to the people and colleges of New York State. However, colleges, educational organizations, and state departments of education in other States have been informed about the CPE Program, and have shown much interest in it, but no special effort has been made to promote the acceptance of CPE's outside of New York State. The New York State Education Department will send a candidate's CPE grade to an out-of-State college or other agency at the candidate's request.

Also, if a student receives CPE credit from a college in New York State, that credit will probably be treated by institutions in other States like credit earned in a course.

Do Other States Have Proficiency Examination Programs?

No, not of the same type as the CPE Program in New York State. However, some other States do, in their teacher certification procedures in the foreign languages, accept scores on language proficiency examinations. The interested individual should write to the department of education in the State in which he would like to be certified.

Is There a National Proficiency Examination Program?

Yes, a new national proficiency examination program called the College-Level Examination Program will give its first examinations in October 1967 and in the third week of every month thereafter. For information on the new program write to:

College-Level Examination Program
College Entrance Examination Board
Box 592
Princeton, New Jersey 08540

What Do You Do Now?

If you think that College Proficiency Examinations can help you, first fill out an application form which may be obtained from the

College Proficiency Examination Program
New York State Education Department
Albany, New York 12224

Second, start studying. The road to knowledge is not an easy one, but it is rewarding. College-level mastery of a subject requires regular, concentrated effort. Whether you use your growing understanding of the world around you just for personal pleasure or put it to work for professional advancement, the "joy of learning" will be yours. Study well, and good luck.

Suggested Study Aids

Following the descriptions of some of the examinations are suggested study aid materials: reading lists, study guides, correspondence courses, television courses, etc.

In those examinations where recommended study materials are not listed, it is suggested that interested candidates seek recommendations for reading from college instructors in the subject. Also, secondary school teachers will very often be helpful, for although they do not teach the subjects at a college level, they are specialists in the respective fields and will be aware of the better texts, references, etc.

PUBLIC LIBRARIES AND BOOKSTORES

Two of the skills most important for the independent student to acquire are the ability to develop bibliographies appropriate to his purpose and to locate the specific works he needs. Public libraries and bookstores can assist in both of these tasks. Many libraries have most of the books a student may need and often have selected bibliographies in specific subjects. College bookstores are a good source for textbooks and will often be able to supply the works used in specific courses. Many bookstores now carry a wide range of paperback books and most bookstores will order any book which they do not have in stock.

There is no shortcut way to mastery of a subject. "Cram" courses and handbooks on how to pass examinations are no substitute for careful systematic study, particularly when the objective is, as it always should be, enduring command of the subject.

EXTENSION NONCREDIT COURSES

Many higher institutions through their evening and extension divisions offer, both on and off campus, a wide variety of noncredit courses during the late afternoon, evening, and weekend. College Proficiency Examinations provide a way for work done in these courses to be evaluated for college credit. In some cases a single examination will be appropriate to the material covered in several individual courses and many combinations of courses may serve as preparation for any one examination.

Each institution will supply information on its offerings and many also provide counseling service.

PUBLIC SCHOOL ADULT EDUCATION COURSES

Some public schools offer adult education courses appropriate to the College Proficiency Examinations. Information on these courses may be obtained from the local superintendent of schools or director of adult education.

INDEPENDENT STUDY PROGRAM OF THE STATE UNIVERSITY OF NEW YORK

The program of correspondence study is a new activity of the State University of New York. The program now offers 23 courses in ten subject areas. Additional courses are under development and will be introduced periodically.

Correspondence study courses will be taught, with few exceptions, by professors who teach the same courses in residence on SUNY campuses. The courses are the equivalent of offerings on the campus, and "home" students can learn the equivalent of classroom students.

The courses are open to all who believe themselves capable of successfully completing the requirements. Students may enroll in the program for the following reasons:

to earn credit to apply toward a degree program within the State University of New York;

to earn credit for other reasons, such as meeting special requirements for professional advancement, preparing for a new occupation, or for self-improvement.

The course outline (syllabus) *without instructions* is available for $2.

Further information regarding the correspondence study program, including the catalogue of current offerings and application forms, may be obtained by writing to:

State University of New York
Independent Study Program
P.O. Box 6271
Albany, New York 12206

OHER HOME STUDY COURSES

There are also many good home study courses offered both by universities in other States and by private home study schools. Directories of schools which offer such courses may be obtained from:

National Home Study Council
1601 18th Street NW.
Washington, D.C. 20009
(The NHSC directory is free)

and

National University Extension Association
1820 Massachusetts Avenue NW.
Washington, D.C. 20036
(The NUEA directory is $.50)

Unfortunately there are also organizations which provide very little for the fees they charge. Before signing for a home study course, the student should check on the reputation of the organization offering it, be sure that the course is in the subject and *at the level* in which he is interested, and read carefully any contract he is asked to sign.

TELEVISION COURSES

University of the Air

The City University of New York and State University of New York now cosponsor a University of the Air on television.

The courses will be presented on Channel 17 in Buffalo, Channel 13 in New York City, Channel 21 in Rochester, Channel 17 in Schenectady and Channel 24 in Syracuse. The courses will be presented from 9 a.m. to 5 p.m. on 32 Saturdays during the 1967-68 academic year.

Courses offered in subjects covered by College Proficiency Examinations will be in

American history
American literature
calculus and analytic geometry

Further information on the courses can be obtained from:

City University of New York
535 East 80th Street
New York, New York 10021

State University of New York
University of the Air
P.O. Box 6271
Albany, New York 12206

Other Television Offerings

Also broadcast over educational channels in New York State will be the telecourse "History of American Civilization by Its Interpreters." Information on this course and accompanying study materials can be received from the Division of Educational Communications, State Education Department, Albany, New York 12224.

In addition, local television stations may present offerings in areas covered by examinations. These stations should be consulted for information on their schedules.

Special Adult Degree Programs

A number of colleges now offer special degree programs for adults. These programs are geared to the needs of mature persons.

Some of the main features of these programs are:

*Preadmission counseling in depth to evaluate the applicant's background and experience in order to place him at an appropriate level in college.

*Courses geared to the interests of adults, both in content and approach.

*Program formats and schedules geared to the convenience of individuals having responsibilities to job, family, and community. Some programs provide for this through evening seminars, some through various types of off-campus study. In these instances, residence requirements are usually minimal and may include only a couple of weeks during the year at a college campus.

Qualifications for these programs often include a minimum age requirement of twenty-five to thirty years. For more information on these programs and matriculation requirements write to any of the following colleges:

SPECIAL DEGREE PROGRAMS FOR ADULTS IN NEW YORK STATE

School of General Studies
Brooklyn College
Bedford Avenue & Avenue H
Brooklyn, New York 11210

School of Continuing Education & Extension
Washington Square College of Arts & Science
New York University
100 Washington Square East
New York, New York 10003

School of General Studies
Queens College
65-30 Kissena Boulevard
Flushing, New York 11367

University College
Syracuse University
610 East Fayette Street
Syracuse, New York 13202

SPECIAL DEGREE PROGRAMS FOR ADULTS OUTSIDE NEW YORK STATE

Adult Degree Program
Goddard College
Plainfield, Vermont 05667

Dean for Continuing Education
Michigan State University
East Lansing, Michigan 48824

Director of Continuing Education
Mundelein College
6363 Sheridan Road
Chicago, Illinois 60626

Continuum Center
Oakland University
Rochester, Michigan 48063

College of Continuing Education
University of Oklahoma
Norman, Oklahoma 73069

Division of Continuing Education
Roosevelt University
Chicago, Illinois 60605

Examination Descriptions

GENERAL INFORMATION

Read very carefully the following general notes which are applicable to every College Proficiency Examination.

1. Each examination description is intended to give an indication of the material covered and the objectives tested, so that an individual may judge whether he has the knowledge expected. The description is not a study guide nor is it intended to provide an exhaustive or systematic summary of the examination content.

2. In order to provide for variations in preparation, the questions on each examination will cover a wider range of material than would ordinarily be studied by any candidate. No one, therefore, should expect to be able to answer all the questions.

3. There will be sufficient time for the well-prepared candidate to complete the examination. This will only be true, of course, if you do not delay excessively over any one question and if you observe time indications closely. Time should not be spent on questions or topics with which you are not familiar. There will generally *not* be time to redo or recopy essay answers. You should, therefore, carefully think through your essay answers before you begin to write.

   In some cases there may be a choice of questions.

4. Unless otherwise indicated, each examination will be three hours in length and include essay, short answer, and multiple choice questions.

To the right of each examination title is the number of credits which the examination committee recommends be given for successful performance on the examination. The candidate should remember that these are only recommended amounts of credits; the credit-granting institution is free to determine in its own way the number of credits it will actually grant for a passing CPE grade.

The recommended number of credits will, in each case, be the amount of credit that the Teacher Certification Unit of the State Education Department will recognize in accepting successful performance on a CPE in lieu of certification course requirements.

ACCOUNTING

Recommended credits: 6

The College Proficiency Examination in Accounting is designed to test achievement equivalent to that attained in a one-year introductory college course in accounting. The candidate will be expected to show an understanding of accounting concepts, principles, and procedures and to demonstrate the ability to use appropriate techniques in recording, analyzing, and summarizing financial data, and to interpret and report financial results.

Content

I. FUNDAMENTALS OF ACCOUNTING
  - **A.** The accounting function
  - **B.** Principles and procedures, including
    1. the accounting cycle
    2. transaction analysis
    3. summarizing and reporting results
       - *a.* periodic adjustments
       - *b.* the chart of accounts
       - *c.* general ledger
       - *d.* special journals
       - *e.* subsidiary ledgers
       - *f.* trial balances
       - *g.* worksheets
       - *h.* financial statements

II. VALUATION AND ANALYSIS OF ACCOUNTS
  - **A.** Cash and bank transactions
  - **B.** Receivables and bad debts
  - **C.** Inventories
  - **D.** Fixed assets and depreciation
  - **E.** Miscellaneous assets
  - **F.** Payables and accrued liabilities
  - **G.** Capital stock issuances and recording
  - **H.** Retained earnings, income, and dividends

III. SYSTEMS, COSTING, AND REPORTING
  - **A.** Accounting systems and internal control
  - **B.** Implications of electronic data processing
  - **C.** Cost accounting concepts and types of cost systems
  - **D.** Types of financial reports

IV. ANALYSIS AND INTERPRETATION

- A. Break-even analysis
- B. Analysis for decision making
- C. Analysis of financial statements
- D. Funds statements
- E. Effects of entity income taxes

Suggested Study Aids

The SUNY Independent Study Program (see page 14) will present courses in *Principles of Accounting.*

CPE COMMITTEE IN ACCOUNTING

James Cashin, Hofstra University, Chairman
Charles Edgette, Niagara University
Frank Kolmin, State University of New York at Albany
Richard Matthews, Pace College
G. Chester Owens, Columbia University

AMERICAN EDUCATION, HISTORY OF

Recommended credits: 3

The College Proficiency Examination in the History of American Education is designed to test the candidate's knowledge and understanding of the important events and developments in American education, and the influence of these events and developments on contemporary policy and practice. The examination assumes preparation equivalent to that of students who have taken the one-semester college course in the history of American education.

Objectives

The candidate will be expected to demonstrate his ability to recall factual information concerning the material listed above. The emphasis, however, will be on questions that require the use of this information in demonstrating an understanding of:

1. The origins of educational practices.
2. The relationships between education and the social circumstances and intellectual assumptions that condition educational policies and practices.
3. The relationship between formal and informal education.
4. The relationships between American and European educational history.

It is recommended that the candidate read one or more texts specifically on the history of American education. In addition, it would be well if he examined selections from general works on American and western history to gain perspective on such topics as informal education, nonschool education, and cultural influences on education.

Content

The candidate will be expected to be familiar with the events and developments in each major period listed below. He should be aware of the way these events and developments relate to the theme listed for each period:

PERIOD	DATES	THEME
I	1600-1690	The spread of Western culture to the Americas
II	1691-1779	The emergence of a distinctive cultural norm in the English speaking colonies

III	1780-1875	The popularization of education and of culture
IV	1876-1939	The secularization, extension, and standardization of education
V	1940-present	The impact of America's role as a world power on American education

Among the topics with which the candidate should be familiar in each period are the following:

- **A.** *Informal education:* including influences deriving from the family, newspapers, literature, politics, technology, etc.
- **B.** *Formal education:* including both schools and other educational agencies (i.e., the museum)
- **C.** *People:* (i.e., Horace Mann, Jane Addams, etc.)
- **D.** *Theories of education:* humanism, pragmatism, scholasticism, etc.
- **E.** *Educational legislation:* (i.e., the Morrill Act of 1862, the Smith-Hughes Act of 1917, etc.)

CPE COMMITTEE IN HISTORY OF AMERICAN EDUCATION

Father John Donohue, Fordham University
Clarence Karier, The University of Rochester
Hyman Kuritz, State University of New York at Albany
Bert Loewenberg, Sarah Lawrence College
Frederick Schult, New York University

AMERICAN GOVERNMENT

Recommended credits: 3

The College Proficiency Examination in American Government is based on material usually covered in a one-semester introductory course of college study. The skills, understandings, and abilities tested are concerned with the use of factual knowledge, the analysis and understanding of relationships, and the interpretation of appropriate political materials. The candidate not only needs to know and understand the important facts, he must also be able to apply this knowledge critically in situations involving theory, structure, process, and policy formulation in American government.

Content

I. FOUNDATIONS AND BASIC CONCEPTS OF AMERICAN GOVERNMENT

  - **A.** Historical and philosophical background
  - **B.** Colonial through constitutional periods
  - **C.** Federalism, separation of powers, and limited government
  - **D.** Official and unofficial agencies in the political process

II. POLITICAL PROCESSES, ORGANIZATION, AND PARTICIPATION

  - **A.** Voting, public opinion, and interest groups
  - **B.** Nominations, elections, and reapportionment

III. STRUCTURE, FUNCTIONS, AND POWERS OF CONGRESS

  - **A.** Legislative procedure
  - **B.** Policy formulation
  - **C.** Related problems

IV. PRESIDENT AND BUREAUCRATS

  - **A.** Term, qualifications, succession, power, and roles of President
  - **B.** The President and the administrative establishment in the formulation and implementation of policy

V. THE FEDERAL JUDICIARY, JUDICIAL REVIEW, LAW AND THE POLITICAL PROCESS

  - **A.** The organization, jurisdiction, and court procedures
  - **B.** Key cases in constitutional law

VI. DEVELOPING CONCEPTS OF PERSONAL RIGHTS AND LIBERTIES AND BASIC CONSTITUTIONAL GUARANTEES

VII. GOVERNMENT AND THE ECONOMY

- A. Budgets, taxes, and expenditures
- B. Promotion or regulation of business, commerce, agriculture, and conservation
- C. Health, education, welfare, and other public projects

VIII. FOREIGN POLICY AND THE NATIONAL DEFENSE

- A. Treaties, executive orders, and joint resolutions
- B. Alliances, international organizations, foreign aid, and international commitments
- C. The military — industrial complex

IX. SHARED POWER AND THE NEW FEDERALISM; THE CHANGING NATURE OF NATIONAL, STATE, AND LOCAL RELATIONSHIPS

Suggested Study Aids

The SUNY Independent Study Program (see page 14), will present a course in *American Government.*

CPE COMMITTEE IN AMERICAN GOVERNMENT

James Riedel, State University of New York at Albany, Chairman

Herbert Rosenbaum, Hofstra University

Maynard Smith, Hobart and William Smith Colleges

Ruth Weintraub, Hunter College

AMERICAN HISTORY

Recommended credits: 6

The College Proficiency Examination in American History is designed to test achievement equivalent to that attained in an introductory college course in American history.

Objectives

The candidate will be expected to have a thorough grounding in facts, but should be able to go on from these facts to an examination of their contexts, their causes and results, and their significance. He will be expected to know how (a) to read historical material analytically and critically, (b) to weigh historical evidence and interpretations, and (c) to arrive at conclusions on the basis of facts. He will be expected to have a knowledge of historians and their interpretations of American History. It will be expected that he know how to use and interpret documents and maps and other graphic materials.

(See also "Do Colleges Establish Other Requirements for Credit," pp. 7 and 8.)

Content

The candidate will be expected to have more than a textbook knowledge of many of the topics covered by the examination and should be able to deal intensively with some of them. Knowledge gained from general historical works, special studies, and biographies may be utilized in answering essay questions.

Certain important topics, not restricted to a single historical period, are listed below. It is not expected that every candidate will have covered all of them, but he should have covered enough and in sufficient depth to show that he has a coherent understanding of American History.

I. America and Europe: transplantation of institutions and ideas, economic ties, diplomacy

II. Population shifts: the westward movement, significance of the various frontiers, territorial expansion, land policy, immigration, urbanization

III. Making of American nationalism: constitutionalism, economic developments, wars and diplomacy, the Supreme Court, national heroes, literature, and the arts

IV. Divisive ideas and interests in American History: sections, classes, States' rights, minorities

V. Development of political ideas: the European heritage, colonial contributions, federalism, the Constitution, the "conservative" versus the "liberal" tradition

VI. The political party system: origins, contests, evolution. minority parties

VII. Business enterprise in America: types and methods of organization in commerce, industry, and finance; achievements; business cycles; technology

VIII. American labor systems and organizations: indentured servitude, slavery, wage labor, contract labor, unions, legislation

IX. American agriculture: the shift from subsistence to commercial agriculture, agrarianism, mechanization, subsidies, legislation

X. Government and the American economy; regulation, protection, promotion

XI. America's reform movements: roots, varieties, methods, achievements

XII. America as a world power: 19th century background, imperialism, the quest for security

XIII. Wars and their impact on the United States: causes, conduct, consequences

XIV. Leadership in America: military, political, economic, intellectual, religious, educational

Suggested Study Aids

I. CORRESPONDENCE COURSES

A. The courses, *History of United States: 1492–1865* and *History of United States: 1865–present* will be offered by the Independent Study Program of State University of New York (see page 14).

B. *A Course in Advanced Placement American History,* University Extension Division, The University of Nebraska, Lincoln, Nebraska 68508.

This home study course is given, through correspondence, by qualified instructors of the Extension Division of the University of Nebraska. Information on tuition and on textbook costs can be obtained from the University of Nebraska.

The course outline (syllabus) ***without any instruction*** is available from the Extension Division for $3.

II. TELEVISION COURSES

A. Educational television channels in Buffalo, New York, Rochester, and Schenectady will present the course, *History of American Civilization by its Interpreters* during the school year. A 160-page guide can be obtained for $1.25 from:

Division of Educational Communications
State Education Department
Albany, New York 12224

B. The University of the Air (see pages 15-16) will present a course in American History which will closely parallel the CPE in American History.

CPE COMMITTEE IN AMERICAN HISTORY

Selig Adler, State University of New York at Buffalo, Chairman
Ralph A. Brown, State University College at Cortland
David M. Ellis, Hamilton College
Henry Graff, Columbia University
Joseph Grande, D'Youville College

AMERICAN LITERATURE

Recommended credits: 6

The College Proficiency Examination in American Literature is designed to test the level of proficiency attained in the study of the literary expression of the American people from the beginning of the 18th century to the present, with strong emphasis on the major writers of the 19th century. The examination assumes preparation equivalent to that of students taking an introductory college course in American literature.

Objectives

Although a certain amount of factual information is necessary to the enjoyment and understanding of literature, analytical and interpretive abilities are of greater importance and are given primary emphasis on the examination.

I. FACTUAL INFORMATION

A. Details of a given work, including identification of well-known or crucial passages, characters, situations, plots, literary allusions, central themes

B. Historical and biographical facts

C. Terms such as Transcendentalism, Imagism, Puritanism, Veritism, which are particularly important in discussion of American writing, and such common terms as Realism, Romanticism, and Naturalism as they apply to American literary history

D. General details of prosody

II. ANALYTICAL AND INTERPRETIVE ABILITIES

A. The content or technique of a single work and the relation of any significant part within a work to other significant parts

B. The content or technique of one work in relation to others by the same author, including the subtler elements of form and substance which can best be revealed by comparison of several works by the same author. For example: matters of prosody, metaphor, symbol, irony; changes in belief; shifts from simple structure in one novel to complex or confused structure in another; and the recurrence of characters or themes

C. Relationships among authors, works, and events which together constitute a literary period

D. Relationships of authors and works of one period to those of another, including such matters as significant similarities and contrasts, influences on form or content, the development of themes or of a literary style, the continuing concern or the sudden lack of concern with social, economic, religious, ethical, or other problems

III. CRITICAL JUDGMENT

The candidate should be able to make and defend critical judgments about works he has read.

Preparatory Reading

In the list below, the phrase "with emphasis on" is used throughout to indicate that study should not be limited to the selection of works listed. No specific questions will be asked on works not listed, but the wider the reading in an author's works, the better the candidate's understanding is likely to be.

I. Specific questions may be asked on *any* of the authors and works listed below.

A. EDGAR ALLAN POE

STORIES, with emphasis on: "Ligeia," "The Fall of the House of Usher," "The Black Cat," "The Man of the Crowd," "The Purloined Letter"

POEMS, with emphasis on: "To Helen," "Israfel," "The City in the Sea," "The Raven," "Annabel Lee," "Dreamland"

ESSAYS: "The Philosophy of Composition," "The Poetic Principle," Review of Hawthorne's *Twice Told Tales* (1842)

B. RALPH WALDO EMERSON

POEMS, with emphasis on: "Days," "Brahma," "Hamatreya," "Bacchus," "Merlin," "Each and All," "Grace," "The Concord Hymn," "The Problem," "Give All to Love," "Ode Inscribed to W. H. Channing"

ESSAYS: "The American Scholar," "Self-Reliance," "Experience," "Fate," "The Poet"

C. HENRY DAVID THOREAU

Walden, "Civil Disobedience," and of his poems

D. NATHANIEL HAWTHORNE

The Scarlet Letter

STORIES, with emphasis on: "Young Goodman Brown," "Rappaccini's Daughter," "The Gentle Boy," "My Kinsman, Major Molineux," "Ethan Brand," "The Minister's Black Veil"

E. HERMAN MELVILLE

Moby Dick, "Hawthorne and His Mosses"

F. SAMUEL L. CLEMENS (MARK TWAIN)

Adventures of Huckleberry Finn, "The Man That Corrupted Hadleyburg," "Fenimore Cooper's Literary Offenses"

G. EMILY DICKINSON

POEMS, with emphasis on: "Success is counted sweetest," "These are the days when birds come back," "I shall know why — when time is over," "I taste a liquor never brewed," "There's a certain Slant of light," "Of bronze — and blaze," "The Soul selects her own Society," "God is a distant — stately lover," "I had not minded — walls," " 'Twas like a maelstrom, with a notch," "This was a poet — it is that," "I died for beauty — but was scarce," "I heard a fly buzz — when I died," "A solemn thing within the soul," "I started early — took my dog," "I think the hemlock likes to stand," "I like to see it lap the miles," "I cannot live with you," "Essential Oils are wrung," "Because I could not stop for Death," "On a columnar self," "A narrow Fellow in the grass," "Further in summer than the birds," "Tell all the truth but tell it slant," "A route of evanescence," "My life closed twice"

H. HENRY JAMES

The Portrait of a Lady, "The Art of Fiction"

I. WALT WHITMAN

POEMS, with emphasis on: "Song of Myself," "Drum Taps," "The Sleepers," "Crossing Brooklyn Ferry," "When Lilacs Last in the Dooryard Bloom'd," "Out of the Cradle Endlessly Rocking," "Song of the Open Road," "Pioneers! O Pioneers!"

II. Questions may be asked on at least *one* author in each of the following groups:

GROUP A

1. EDWARD TAYLOR

POEMS, with emphasis on: "Huswifery," "Upon a Spider Catching a Fly," "Upon the Sweeping Flood," "The Joy of Church Fellowship Rightly Attended," "The Glory of and Grace in the Church Set Out," "The Reflexion"

2. BENJAMIN FRANKLIN

Autobiography

3. THOMAS PAINE

"The American Crisis" (Chapters 1 and 16)

GROUP B

1. WILLIAM CULLEN BRYANT

POEMS, with emphasis on: "Thanatopsis," "To a Waterfowl," "Inscription for the Entrance to a Wood," "To a Fringed Gentian," "A Forest Hymn," "The Antiquity of Freedom"

2. JAMES FENIMORE COOPER

One of the Leatherstocking Tales: *The Deerslayer, The Last of the Mohicans, The Pathfinder, The Prairie, The Pioneers*

3. WASHINGTON IRVING

"Rip Van Winkle," "The Legend of Sleepy Hollow," "The Author's Account of Himself"

GROUP C

1. HENRY WADSWORTH LONGFELLOW

POEMS, with emphasis on: "Divina Commedia" (sonnets I to VI), "The Tide Rises, The Tide Falls," "The Jewish Cemetery at Newport," "Shakespeare," "A Nameless Grave," "Serenade," "The Building of the Ship," "The Cross of Snow," "Jugurtha," "My Lost Youth," "The Wreck of the Hesperus"

2. JOHN GREENLEAF WHITTIER

POEMS, with emphasis on: "Telling the Bees," "Snow-Bound," "Ichabod," "Skipper Ireson's Ride," "Massachusetts to Virginia"

3. OLIVER WENDELL HOLMES

Poems, with emphasis on: "Old Ironsides," "The Deacon's Masterpiece," "The Chambered Nautilus," "My Aunt"

4. JAMES RUSSELL LOWELL

"A Fable for Critics"

GROUP D

1. STEPHEN CRANE

Maggie, A Girl of the Streets, "The Open Boat," "The Bride Comes to Yellow Sky," "The Blue Hotel"

2. WILLIAM DEAN HOWELLS

A Modern Instance

3. HENRY ADAMS

The Education of Henry Adams

GROUP E

1. THEODORE DREISER

Sister Carrie

2. ERNEST HEMINGWAY

The Sun Also Rises, "The Snows of Kilimanjaro," "Three Day Blow," "Big Two-Hearted River," "In Another Country," "A Clean Well-Lighted Place"

GROUP F

1. ROBERT FROST

Poems, with emphasis on: "Design," "Provide, Provide," "Stopping by Woods on a Snowy Evening," "The Death of the Hired Man," "Home Burial," "Mending Wall," "Birches," "Departmental," "Fire and Ice"

2. EDWIN ARLINGTON ROBINSON

Poems, with emphasis on: "Eros Turannos," "Mr. Flood's Party," "Isaac and Archibald," "The Man Against the Sky," "Luke Havergal," "Miniver Cheevy," "Richard Cory"

GROUP G

1. **T. S. ELIOT**

Poems, with emphasis on: "The Love Song of J. Alfred Prufrock," *The Waste Land,* "Animula," "Marina," "A Song for Simeon," "Journey of the Magi"

ESSAY: "Tradition and the Individual Talent"

2. **WILLIAM FAULKNER**

The Sound and the Fury

Suggested Study Aids

The University of the Air (see pages 15-16) will present a course in American Literature.

CPE COMMITTEE IN AMERICAN LITERATURE

Mary Barrett, Orange County Community College
John Lydenberg, Hobart and William Smith Colleges
Joseph Sandman, Canisius College
Joseph Slater, Colgate University

ANTHROPOLOGY

There are two College Proficiency Examinations in Anthropology: Anthropology A covers material usually contained in a one-semester college course covering prehistoric archeology, anthropological linguistics, and physical anthropology; Anthropology B covers the material found in a one-semester college course in cultural anthropology.

Both examinations require the candidate to demonstrate an understanding of man as a biological organism which behaves according to patterns in large part dictated by culture, and which communicates with his fellows through verbal symbolic systems, or languages. Both examinations will examine the candidate's understanding of the historic and evolutionary processes by which human biology, cultures, and languages came into being and attained their present forms. The candidate will thus be required to show a knowledge of man in society as seen in temporal and comparative perspective.

ANTHROPOLOGY A

Recommended credits: 3

Objectives

Those questions on *prehistoric archeology* will require the candidate to demonstrate an understanding of significant features and trends in the prehistoric cultural development of the Old and New Worlds, the ability to evaluate possible *causes* of that development such as environmental determinants, improvements in technology, diffusion of elements from one culture to another, etc., and an understanding of the relationship between studies of past and contemporary societies.

Those questions on *physical anthropology* will require the candidate to demonstrate an understanding of subfields of physical anthropology as well as an understanding of the relationship between those subfields and anthropology as a totality.

Those questions on *anthropological linguistics* will require the candidate to demonstrate a general knowledge of the nature of language structure and of procedures for describing particular languages in the field situation, a familiarity with the concept of linguistic relationship and the comparative method to the extent that proposals in historical linguistics can be realistically evaluated and an understanding of the more important recent formulation of relationships between language culture and social structure.

Content

I. PREHISTORIC ARCHEOLOGY

  A. ARCHEOLOGY OF THE OLD WORLD

1. The Pleistocene setting of early human cultures; geological and fossil associations
2. Beginnings of culture, "eoliths," pebble tools, and their context
3. The Lower Paleolithic in Europe, Asia, and Africa; the Middle Paleolithic, especially in Europe and the Near East
4. Big-game hunting cultures of the Upper Paleolithic; the appearance of modern man; the end of the Pleistocene
5. Post-Pleistocene Mesolithic cultures; the era of intensive food-collecting in the Near East
6. Beginnings of agriculture and animal domestication in the Near East, the "Neolithic Revolution," with special attention to Mesopotamia, the Levant, and Anatolia
7. The intensification of production and further development of Neolithic society in the Tigris-Euphrates and Nile valleys, culminating in Bronze Age civilization
8. The spread of agriculture and Neolithic culture into Europe and Africa
9. The Indus valley civilization and its relation to the Near East
10. The Far East: The Neolithic of China and related areas, and the emergence of Chinese Bronze Age civilization
11. Oceania, its archeological relations to the Asiatic mainland, and its possible relations to the New World in prehistoric times

B. ARCHEOLOGY OF THE NEW WORLD

1. Late Pleistocene migrations of man into the New World. Geological and fossil evidence
2. The first, or Lithic stage of aboriginal American culture; projectile-point cultures, and the possible existence of earlier nonprojectile point cultures
3. Later hunting and gathering cultures, the Archaic stage (including the Great Basin, Plains, early Southwest, and Far West areas of the United States, as well Eskimo archeology)
4. Development and nature of New World agriculture; its contrast with that of the Old World
5. Origins and rise of high cultures in Nuclear America, Mexico through Peru; the Formative, Classic, and Post-classic stages. Special reference to the antecedents and nature of the Maya, Aztec, Inca societies
6. Relationships within the Nuclear America area from Formative times onward, not omitting Central America, Colombia, and Ecuador
7. Aboriginal farming cultures of North America: The Southeastern and Northeastern United States; the Southwest and the rise of Pueblo Indian and other cultures of the area
8. Lowland South America (and the Caribbean); the relation between these areas and the Andean high culture area in prehistoric times
9. Trans-Pacific influences on the aboriginal cultures of the New World

II. PHYSICAL ANTHROPOLOGY

A. EVOLUTION AND GENETICS

1. Mendel's laws applied to simple single and double gene traits
2. Meiosis and mitosis and the significance of both in continuity and variation within evolutionary systems.
3. Significance of mutation, selection, drift, interbreeding, and migration to evolution and genetics

4. The Hardy-Weinberg law and human population genetics
5. Dominant, recessive, polygenetic, and sex-linked traits
6. Natural selection; the relationships between it and modern genetics
7. Modern gene theory (DNA and RNA)
8. Relationships between modern genetic history, inincluding population genetics, and theories of human variation
9. Transient and adaptive polymorphism with examples from the subhuman animal kingdom and human populations

B. FOSSIL MAN

1. Major finds and their significance
   a. Australopithecinae
   b. Homo Erectus (including Pithecanthropus and Sinanthropus)
   c. Neanderthalensis (classic and so-called "progressive")
2. Major morphological characters of the above
   a. Cranial capacities
   b. Facial skeleton (chin, zygomatic arch, maxillary region, orbits, and brow ridges)
   c. General shape of the cranium
   d. Tooth pattern and development
3. Principles of classification and taxonomy in fossils (particularly the views of Le Gros Clark)
4. Relationships between culture and human evolution

C. PRIMATE EVOLUTION

1. Major radiations of the primates (adaptive significance of each)
2. Major distinguishing features of:
   a. Prosimii
   b. Anthropoidea
   c. Cercopithecoidea
   d. Ceboidea

    - e. Pongidae
    - f. Hominoidea
    - g. Hominidae
  - 3. Significance of primate behavior studies for the understanding of primate evolution
  - 4. Comparative growth patterns of primates including man

D. HUMAN VARIATION

1. Major theories of racial origin and classification (Brace, Coon, Boyd, Garn)
2. Significance of blood group studies for studies of human variation
3. Distinction between typological and populational classifications
4. Sociological vs. biological definitions of race
5. Sheldon's system of somatological classification and critiques of the system
6. Significant studies of variation and interbreeding within and between particular racial groups (Boas, Shapiro and Hulse)

III. ANTHROPOLOGICAL LINGUISTICS

A. DESCRIPTIVE LINGUISTICS

1. Articulatory phonetics; the sounds of speech, the mechanisms of their production, and the techniques and terminology for their description
2. Phonemic analysis and eliciting procedures in fieldwork; the nature of phonemic systems
3. Morphology and syntax; the objectives and procedures of syntactical analysis and the varieties of grammatical devices found in various languages

B. COMPARATIVE LINGUISTICS

1. Genealogical classification of languages; the nature of linguistic relationships; language reconstruction, the comparative method, and internal reconstruction
2. Typological classification of languages

3. Subclassification and dialectology; the use of lexicostatistics in subgrouping and estimation of time depths
4. Characteristics of change in phonological, grammatical, and semantic systems; borrowing
5. Linguistic geography; world language areas and relationships

C. LANGUAGE, CULTURE, AND SOCIETY

1. Semantic analysis and the conceptual categories expressed in language; the ethnographic study of cognitive systems
2. Sociological aspects of language habits; language in interaction situations, speech levels, and the expression of personality; bilingualism and social dialects
3. Oral literature; folklore and structural analysis of myth
4. Linguistic and behavioral structures; psychlinguistics, paralanguage, and the relationship between language categories and categories revealed in nonverbal behavior

ANTHROPOLOGY B

Recommended credits: 3

CULTURAL ANTHROPOLOGY

Objectives

The candidate will be expected to demonstrate an understanding of social and cultural theory and the ability to use such concepts in the analysis of data. He will be examined on his comprehension of the significance of cultural differences and similarities of various aspects of social life and on his understanding of the relation between social institutions and practices in various societies. Emphasis will be on understanding, but knowledge of facts will be necessary to provide the substance through which understanding may be shown.

Emphasis will also be on the cross-cultural and comparative approach of cultural anthropology, and on material derived from primitive (i.e., nonliterate and simple) societies.

Content

I. SOCIAL AND CULTURAL THEORY

The concept of culture; pattern, theme, and integration in culture; culture areas; cultural diffusion; theories of cultural history, cultural relativism; social structure, structural function; social status and social role; theories of social and cultural evolution; theories of culture change; acculturation.

II. ECOLOGY AND ECONOMY

Relations between environment used, technology available, and form of society; environment as a limiting and as a creative factor in cultural change and growth; modes of adaptation of hunting and collecting, pastoral and horicultural societies; systemic relations between societies and their environments; patterns of cooperation and competition in different cultures; organization of work; division of labor between the sexes; occupational specialization; trade and markets; money; property; technologies of simpler societies; prestige economies as evidence in Melanesian kula ring, Northwest Coast potlatch, and other institutions; patterns of distribution and consumption of goods and services.

III. MARRIAGE, FAMILY, AND KINSHIP

Institutions of marriage; monogamy and polygamy; bride price, dowry, and affinal exchange; social determinants of rate of divorce; theories on the definition and prohibition of incest; marriage as a means of relating groups; the biological, or nuclear family; social roles within the family; the compound family; extended or joint families; rules of descent and inheritance; patrilineal, matrilineal, and double descent; ambilineal descent; bilateral kin groups and the kindred; political, economic, and religious functions of kinship groups; structured relations between different categories of kinsmen in human societies as evidenced in relations between grandparents and grandchildren, sisters and brothers, mother's brother and sister's son, parents and children, etc.; kinship terminological systems and their social significance.

IV. AUTHORITY, STRATIFICATION, AND SOCIAL CONTROL

Rank order and prestige; class stratification; caste in India, and analogous institutions in other societies; institutions of leadership and public office; the nature of bureaucracy; origin and nature of the state; nature of stateless societies; formal and informal sanctions; law and jurisprudence in simpler societies.

V. RELIGION

Theories on the origin of religion; animism and animatism; systems of cosmological and supernatural belief; magic, and magic as contrasted with science; shamanistic practices; priest and shaman contrasted; religious rite and ceremony and their relations to both belief and social structure; totemism; taboo; sacrifice and sacrament; sociological theories of religion; psychoanalytic theories of religion; religion and social control; mythology.

VI. CULTURE AND PERSONALITY

Relation of the individual to his society and culture; theories of personality formation; culturally determined patterns of socialization and childhood and relation to the adult personality; modal and basic personality structures; the concept of "national character," cultural determinants of mental illness; society and the deviant personality; cultural patterning of biological drives.

VII. ART

Oral literature (not including mythology, which appears under religion); plastic and graphic arts; music; dance and drama; comparative aesthetics; the social role of the artist.

VIII. HISTORY OF THEORY

Theoretical contributions of Bronislaw Malinowski, Edward Tylor, Lewis Henry Morgan, Emile Durkheim, Marcel Mauss, A. R. Radcliffe-Brown, Franz Boas, Alfred L. Kroeber, Robert H. Lowie, Ralph Linton, Henry Maine, F. Graebner, Leslie White, Julian H. Steward, George P. Murdock, Robert Redfield.

Suggested Study Aids

1. The University of the Air (see pages 15-16) will present a course in Anthropology.

2. The pamphlet "Cultural Anthropology" by Walter Goldschmitt which contains recommended readings is available for $.60 from the American Library Association Public Affairs Pamphlets, 381 Park Avenue S., New York, New York 10016.

CPE COMMITTEE IN ANTHROPOLOGY

Alexander Alland, Jr., Columbia University
Marvin Harris, Columbia University, Chairman
Robert Murphy, Columbia University
Harvey Pitkin, Columbia University
Robert Stigler, Columbia University

APPLIED MUSIC

Recommended credits: 2 per instrument

There is a College Proficiency Examination in Applied Music for each of the following:

Piano
Violin
Viola
Cello
String Bass
Flute
Oboe
Clarinet
Bassoon
Saxophone
Trumpet (Cornet)
French Horn
Trombone
Baritone Horn
Tuba

General Percussion
Voice

Each CPE in Applied Music will be an evaluation of the candidate's performance on one of the above instruments or voice, by a "jury" of college instructors of music. Each will assume preparation equivalent to that received in a 2 credit college course.

The candidate will be evaluated in the following areas which will be weighted approximately equally:

Repertory—outlined in the Description of Content

Technique—tone quality, facility, intonation, and related theoretical knowledge

Sight reading

The fee for each CPE in Applied Music is $15.

The amount of time necessary for the examination will be at the discretion of the examiners but will generally last fifteen to thirty minutes.

Content

I. INSTRUMENTAL

The candidate will be required to:

A. Demonstrate the Basic Elements as outlined in Levels One and Two of the *Handbook for Applied Music.**

B. Perform from two prepared, but not necessarily memorized, etudes of contrasting styles selected from the method books listed as Level Two or Elementary, as specified for the appropriate instrument in the *Handbook for Ap-*

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* *Handbook for Applied Music,* available from the Bureau of Secondary Curriculum Development, New York State Education Department, Albany, New York 12224 (no charge).

plied Music. He may select equivalent or more advanced material, at his discretion.

C. Perform one prepared, but not necessarily memorized, solo, in its entirety, selected from at least Level Two of the *Handbook for Applied Music*.

The (non-piano) instrumentalist is not required to have an accompanist for his solo performance, but may do so if he wishes.

D. Perform, at sight, material comparable to that listed at Level One of the *Handbook for Applied Music*.

II. VOCAL

The candidate will be required to:

A. Demonstrate, in his performance, the six fundamental vocal techniques as outlined in the *Handbook for Applied Music*.

B. Sing three prepared, but not necessarily memorized, contrasting solos from the standard vocal literature, comparable stylistically to those listed in the *Handbook for Applied Music*. At least one solo must be in Italian.

The vocal candidate will be required to make arrangements for his own accompaniment for his solos. He may not accompany himself at the examination. A recorded accompaniment may be used provided copyright regulations are not violated. The candidate must supply his own equipment.

C. Sing, at sight, material comparable to that listed at Level One of the *Handbook for Applied Music*.

CPE COMMITTEE IN APPLIED MUSIC

Walter Beeler, Ithaca College
Mark Dolliver, Jr., C. W. Post College, Chairman
Everett Gates, Eastman School of Music
Howard Marsh, State University College at Fredonia
Jerrold Ross, New York University

BIOLOGY

Recommended credits: 6

The College Proficiency Examination in Biology is based upon the introductory college course in biology.

Objectives

The examination presupposes that in his study the candidate has emphasized the fact that fundamental principles apply to both plants and animals. The overall approach assumed is dynamic, including constant attention to functional morphology. Since evolution is a fundamental theme in biology, understanding will be expected of the interdependence of organism and environment, with stress on animal adaptations and behavior. Since a thorough understanding of concepts in biology involves chemistry, the candidate will be expected to have a background in that subject.

(See also, "Do Colleges Establish Other Requirements for Credit?", p. 14.)

Content

I. UNITY AMONG LIVING THINGS: PROTOPLASM, CELLS, AND CELLULAR METABOLISM

- A. General structure of cells as revealed by electron microscopy
    - 1. Cell wall, cell membrane, plasma membrane, endoplasmic reticulum, ribosomes, mitochondria, plastids, vacuoles, lysomes, centrioles, Golgi apparatus, nuclear membrane, nucleous, and chromosomes
- B. Biochemistry
    - 1. Fundamentals
        - a) Properties and distribution of elements with emphasis on carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur, ions, valence, pH, concepts of free energy and entropy
        - b) Compounds, particularly carbon compounds
    - 2. Carbohydrates: pentoses, hexoses, monosaccharides, disaccharides, polysaccharides

3. Lipids: fats, saturated and unsaturated fatty acids, glycerol, steroids
4. Proteins: amino acids, peptide linkage, dipeptides and polypeptides, simple and conjugated proteins, denaturation of proteins
5. Nucleic acids: DNA, RNA, nucleotides

C. Origin of energy sources and their transformation in cells
  1. Photosynthesis
    a) Structure of chloroplasts, structure of grana, chemistry of chlorophyll, factors affecting synthesis of chlorophyll, chromatographic techniques for separating pigments, role of pigments in photosynthesis
    b) Dark and light phases of photosynthesis: important chemical reactions in CO_2 fixation, role of light, phosphorylation
    c) History of major experiments such as those of Van Helmont, Priestley, Ingenhousz, Blackman, Ruben and Kamen, Calvin and Benson
  2. Respiration of carbohydrates
    a) ATP: composition, functions, phosphagens, "high energy" bond formation and transfer
    b) Anaerobic phase: important chemical reactions of glycolysis and alcoholic fermentation
    c) Aerobic phase: important chemical reactions, Krebs cycle
    d) Relative efficiency of aerobic and anaerobic phases
    e) Hydrogen and electron transfer systems: pyridine and flavin nucleotides, cytochrome system
    f) Enzymes: (1) dehydrogenases, carboxylases, oxidases, phosphorylases; (2) major coenzymes and their functions; (3) vitamins in relation to enzymes and coenzymes
  3. Respiration of fats and proteins
    a) Fats: beta oxidation, relation to the Krebs cycle and acetyl-CoA, glycerol in relation to carbohydrates

b) Proteins: deamination and transamination, formation of urea (arginine-ornithine cycle), relation of "carbohydrate fraction" of amino acids to metabolites of Krebs cycle

D. Basic synthesis of carbohydrates, proteins, fats

1. Carbohydrates: polymerization, dehydration synthesis, general structure of starch, cellulose, glycogen
2. Proteins: relation to ribosomes, endoplasmic reticulum, DNA, RNA, and genes
3. Fats: relation to the Krebs cycle and acetyl-CoA

E. Passage of materials into and out of cells

1. Chemical composition and structure of the cell wall and cell membrane
    - a) Plasmodesmata in plant cells, effects of structure on selective permeability
    - b) Relation of cell membrane to endoplasmic reticulum
2. Penetrating particles: concentration, charge, size, solubility
3. Effects of hypertonic, hypotonic, and isotonic solutions on cells
4. Active transport
5. Pinocytosis

F. Mitosis and cytokinesis

1. Structure and function of the nucleus
2. Mitotic apparatus
3. Phases of mitosis
4. Method of DNA replication
5. Cytokinesis in animal and plant cells

II. DIVERSITY AMONG LIVING THINGS: STRUCTURE, FUNCTION, REPRODUCTON, DEVELOPMENT, EVOLUTION, DISTRIBUTION, AND CLASSIFICATION

A. Viruses (including phages)

1. Questions as to their nature
2. Replication

B. Bacteria

1. Morphology and physiology: types, spore formation, respiration (aerobic, facultative and obligate anaerobic), fermentation
2. Modes of nutrition including photosynthesis and chemosynthesis
3. Relation to the carbon and nitrogen cycles

C. Fungi

1. Major characteristics of slime molds and true fungi
2. Reproduction in Rhizopus, Neurospora, Puccinia
3. Economic importance

D. Green algae

1. Major characteristics
2. Reproduction to illustrate meiosis, zoospore formation, isogamy, heterogamy
3. Relationship to the evolution of higher plants: biochemical similarities, alteration of generations

E. Bryophyta: emphasis should be placed upon the adaptations to a terrestrial environment both in the vegetative structures and in the methods of reproduction

1. Characteristics of mosses and liverworts
2. Life cycle of a representative form

F. Tracheophyta

1. Ferns: life cycle with the emphasis on alternation of generations
2. Pine: structure of the seed with the emphasis on its evolutionary significance
3. Angiosperms
    a) Reproduction and life cycle: (1) flower—structure, details of the male and female gametophyte genera-

tions, relationships to insects in geologic time and in adaptations for pollination, initiation of flowering-photoperiodism; (2) seed—development of embryo sporophyte in the seed, differences between monocots and dicots, dormancy, germination, economic importance; (3) fruit—relationship to seed dispersal, auxins as related to parthenocarpy, economic importance; (4) vegetative reproduction

b) Structure and physiology of the sporophyte: (1) root, leaf, and stem of a typical herbaceous plant; (2) water and mineral absorption, movement; (3) food translocation and storage; (4) growth from the seed and maturation to include primary and secondary tissues, cell enlargement, cell differentiation; (5) irritability—tropisms and other movements, relationship of auxins

G. Invertebrates—structure, function, and distribution

1. Protozoa: to be studied as simple organisms solving fundamental problems of existence, free-living and parasitic forms to be considered
2. Coelenterata: tissue grade of organization, cell specialization, regeneration, nerve-net structure
3. Platyhelminthes: bilateral symmetry, cephalization, organ-systems, mesodermal structures, free-living versus parasitic forms
4. Echinodermata: phylogenetic relationships to chordata
5. Annelida: general body plan, trochophore larva, schizocoel, segmentation
6. Arthropoda: general body plan, adaptations to a land environment, respiratory mechanisms of the various classes, hormones affecting the metamorphosis of insects, economic importance

Note: The invertebrate phyla listed above have been selected on the basis of phylogenetic significance. Mollusca, Porifera, and Nematoda *should* also be studied.

H. Chordates: structure, function, reproduction, development, classification, evolution, and distribution

Laboratory study of the structure and function of organ systems of some vertebrate such as a frog, rat, or fetal pig. The candidate is expected to have acquired some familiarity with the invertebrate chordates, the notochord of invertebrate chordates and of vertebrates, and various vertebrate classes.

1. Digestive system: structure, enzymes, nervous and hormonal control, absorption
2. Respiratory system: the breathing mechanism in a fish, in an amphibian, and in a mammal; gaseous exchange in lungs, gills, and skin; relationship to cellular respiration
3. Circulatory system: composition and functions of blood and lymph, immunity, homeostatic control of blood composition, patterns of circulation in an amphibian and in a mammal, renal and hepatic portal systems
4. Excretory system: general structure; detailed structure of a nephric unit and functions performed in each part; relationship of the kidney to homeostasis; sweat glands; the liver as an excretory organ, including urea formation
5. Skeletal and muscular system: the basic structural plan of the skeleton and the relation of muscles to skeletal movements, ligaments, tendons, antagonistic action of muscles, muscle physiology
6. Integrative systems
    a) Central nervous system: the five major divisions of the brain, functions of parts of the brain and spinal cord, cranial and spinal nerves, types and structure of neurons, nature of the nerve impulse, synaptic transmission, reflex arc, conditioned reflex
    b) Autonomic nervous system: structure, function, and neurohumors of sympathetic and parasympathetic divisions; relationship of the sympathetic division to the adrenal medulla

- c) Endocrine glands: pituitary, thyroid, islets of Langerhans (alpha and beta cells) parathyroids, gonads, adrenals, hormones affecting the digestive glands, relationship of the pituitary to the brain

7. Reproductive system
   - a) Structure
   - b) Details of oogenesis and spermatogenesis
   - c) Hormonal control of sperm and egg production and uterine development in mammals
   - d) Fertilization in land and water organisms
   - e) Natural and artificial methods of parthenogenesis

8. Development of an animal embryo
   - a) Effects of yolk upon embryological development
   - b) Early embryology of a homolecithal egg
   - c) Early embryology of an amphibian egg through the neurula stage
   - d) Germ layer origins of organ systems
   - e) Formation and function of four extra-embryonic membranes of a reptile or bird
   - f) Formation of the placenta and umbilical cord and their functions
   - g) Pattern of circulation in a mammalian embryo and the changes occurring at birth

III. CONTINUITY OF LIVING THINGS

- A. Genetics: plant, animal, and human examples should be considered
  1. Meiosis: phases, synapsis and crossing-over, tetrad formation, animal and vegetal poles
  2. Classical genetics and the development of the gene theory
     - a) Mendel's work and principles
     - b) Sutton's hypothesis—relating Mendelian laws to chromosomes
     - c) Morgan's experiments establishing genes as portions of chromosomes

    - d) Lethal factors
    - e) Multiple alleles—blood types
    - f) Factor interaction resulting in modified two-factor ratios
    - g) Multiple factors—relation to the normal probability curve
    - h) Mechanisms of sex determination (XY, WZ, XO, monoploid-diploid)
    - i) Sex linkage in humans and in fruit flies
    - j) Techniques of mapping the chromosomes: percentage of crossing-over

3. Mutations: genic and chromosomal (deletions, duplications, translocations, inversions), ploidy, induction of mutations, relationship to evolution
4. Mechanism of gene action: experiments with Neurospora, gene-enzyme relationships with illustrations in humans (phenylketonuria, alkaptonuria, sickle-cell anemia)
5. Experiments that indicate the relationships between DNA and genes: bacterial transformations, bacterial viruses
6. Genetic code: experiments to illustrate the techniques employed, relation to protein synthesis
7. Examples of cytoplasmic inheritance
8. Population genetics: Hardy-Weinberg Principle and its relation to natural selection and genetic drift (see Evolution.)

B. Evolution

1. Theories of the origin of life
2. Criteria for determining the nature of a species
3. Evidence for evolution from biochemistry, morphology, embryology, physiology, paleontology, and geographical distribution
4. Theories of the mechanism of evolution
    - a) Lamarck's theory of use and disuse

- b) Darwin's theory of natural selection
- c) DeVries and mutations
- d) Modern concepts

5. Factors influencing natural selection and speciation: population genetics (size, isolation, genetic drift), adaptive radiation (suggested example—Darwin's Finches on the Galapagos)
6. The evolution of man

IV. ECOLOGICAL RELATIONSHIPS AMONG LIVING THINGS

It is assumed that the relationship between the organism and its environment has received attention throughout the course. The purpose of this section is to summarize the information thought desirable.

A. Physical (Abiotic) factors: soil, water, temperature, light, atmosphere, radiation

B. Biotic factors

1. Cycle of the elements (especially carbon and nitrogen)
2. Food chains — relationships with regard to numbers, mass, size, energy flow
3. Symbiosis: mutualism, parasitism, commensalism
4. Succession
5. Social relationships (ants, bees, birds, deer)

Suggested Study Aids

A 28-page pamphlet, *Biological Frontiers,* by Lawrence J. and Marjorie Milne is available for $.60 from the American Library Association Public Affairs Pamphlets, 381 Park Avenue S., New York, New York 10016.

CPE COMMITTEE IN BIOLOGY

Harry Brenowitz, Adelphi University
Carroll Knowlton, Orange County Community College
Paul Medici, St. John's University
Harold Powers, State University College at Oswego
Sister Francis Solano, Nazareth College of Rochester

CALCULUS

There are two College Proficiency Examinations in Calculus: Calculus A on work usually covered in a two-semester college sequence in calculus; Calculus B on a three-semester college sequence in calculus. There is, of course, a common core of topics in the two sequences. The candidate should carefully study the description of each examination in order to determine which is most appropriate to his own preparation.

It is recommended that the candidate be familiar with the topics covered in the syllabuses for New York State Regents examinations in 10th and 11th year mathematics. In particular he will be expected to understand the properties of real numbers; the concept of absolute value; the solution of simple equations and inequalities involving absolute values; the algebra of polynomials including the determination of the rational roots of polynomial equations with integral coefficients; and the concept of function, including polynomial, power, exponential, logarithmic, trigonometric, and inverse trigonometric functions.

CALCULUS A

Recommended credits: 6

The Calculus A Examination is designed to cover the material of a one-year college course in calculus and related analytic geometry.

Content

I. ANALYTIC GEOMETRY REVIEW AND EXTENSION

A. Rectangular and polar coordinates
B. Distance and slope
C. Parallelism and perpendicularity of lines
D. Equations and graphs
E. Line and circle
F. Other conics

II. DIFFERENTIAL CALCULUS OF ALGEBRAIC FUNCTIONS

A. The function concept
B. Absolute values and inequalities
C. Definition and basic properties of limits
D. Fundamental ideas of continuity

E. Slope of a curve, average and instantaneous rates of change
F. Definition of the derivation
G. Formal differentiation
H. Implicit functions and implicit differentiation
I. Differentiation of composite functions and of parametrically defined functions
J. Higher order derivatives
K. The differential and its use in approximation
L. Rolle's theorem and the theorem of the mean

III. APPLICATIONS OF DIFFERENTIAL CALCULUS

A. Tangents and normals
B. Curve tracing, maximum and minimum points, points of inflection, horizontal, and vertical asymptotes
C. Problems leading to maximum and minimum values, both relative and absolute
D. Rate problems and related rates
E. Velocity and acceleration of a particle along a straight line; along a curve, using vectors
F. Properties of conic sections involving tangents

IV. INTEGRAL CALCULUS OF ALGEBRAIC FUNCTIONS

A. The inverse of differentiation
B. Integration of simple expressions, basic formulas
C. Integration by substitution; integration by parts
D. Simple differential equations with initial conditions
E. Intuitive development of the definite integral as the limit of a sum
F. Intuitive treatment of the fundamental theorem of the integral calculus
G. Evaluation of simple definite integrals
H. Approximation of definite integrals by the trapezoidal rule

V. GEOMETRIC AND PHYSICAL APPLICATIONS OF INTEGRATION

A. The area under a curve
B. The average (mean) value of a function
C. Areas between curves
D. Volumes of revolution
E. Volumes by slicing
F. Motion in a straight line
G. Work

VI. THE CALCULUS OF ELEMENTARY TRANSCENDENTAL FUNCTIONS

- A. Exponents and logarithms
- B. The exponential and logarithmic functions
- C. The inverse relationship of these functions
- D. The derivatives of e^u, $\log_e u$, and $\log_a u$
- E. The integrals of $e^u du$ and $\frac{du}{u}$
- F. Trigonometric functions of real numbers
- G. Limit of $\frac{\sin x}{x}$ as $x \rightarrow 0$
- H. The derivatives and integrals of sin u and cos u
- I. The derivatives and integrals of other trigonometric functions
- J. Parametric representations involving trigonometric functions for curves, such as the ellipse, hyperbola, and cycloid

The applications as listed in III and V, above, when the functions involved are transcendental, including growth and simple harmonic motion. Use of simple trigonometric substitutions in integration.

CALCULUS B

Recommended credits: 9

The Calculus B Examination is designed to cover the material of a 1½ year course in college calculus and related analytic geometry. The candidate will be expected to demonstrate knowledge and understanding of basic concepts, theorems and proofs; the ability to use necessary techniques, apply them to problems in geometry and physics and develop simple proofs.

The candidate should be familiar with rectangular coordinates, distance and slope, parallelism and perpendicularity of lines, equations, and graphs, and the straight line.

Content

I. ANALYTIC GEOMETRY AND VECTORS

- A. Vectors in the plane — addition, multiplication by scalars, scalar and vector products; components
- B. Conic sections — definitions and basic properties

- **C.** Translations and rotations
- **D.** Polar coordinates — meaning, curve tracing, application to conics
- **E.** Parametric and vector representation of curves — concept, derivatives of vectors, velocity, and acceleration vectors
- **F.** Equations and vectors in three dimensions — determinant notation, vector product, scalar and vector triple products, lines and planes
- **G.** Space curves and surfaces — tangents and tangent planes, directional derivatives

II. DIFFERENTIAL CALCULUS

- **A.** The function concept
- **B.** Definition and basic properties of limits
- **C.** Definition of continuity
- **D.** Slope of a curve, average and instantaneous rate of change
- **E.** Definition of the derivative
- **F.** Differentiation of algebraic, exponential, logarithmic, hyperbolic, trigonometric, and inverse trigonometric functions
- **G.** Implicit functions and implicit differentiation
- **H.** Differentiation of composite functions and parametrically defined functions
- **I.** Higher order derivatives
- **J.** The differential and its use in approximation
- **K.** Rolle's theorem and the theorem of the mean
- **L.** Applications of differential calculus
    1. tangents and normals
    2. curve tracing, maximum and minimum points, points of inflection, horizontal and vertical asymptotes
    3. problems leading to maximum and minimum values, both relative and absolute
    4. rate problems and related rates
    5. velocity and acceleration of a particle along a straight line; along a curve
    6. indeterminate forms

III. INTEGRATION OF ELEMENTARY FUNCTIONS AND APPLICATIONS

- **A.** The definite integral as the limit of a sum

B. The fundamental theorem of calculus
  1. evaluation of definite integrals
  2. basic formulas such as $\int_a^b f(x)dx + \int_b^c f(x)dx = \int_a^c f(x)dx$, $\int_a^b kf(x)dx = k\int_a^b f(x)dx$
  3. improper integrals
  4. approximations of definite integrals such as the trapezoidal rule and Simpson's rule

C. The definite integral:

Basic formulas such as $\int kf(x)dx = k\int f(x)dx$,

$\int [f(x) + g(x)]dx = \int (x)dx + \int g(x)dx$

D. Various methods of integration — substitution, parts, partial fractions, use of tables

E. Applications — area, volumes, hydrostatic force, moments and centroids, linear motion, work, arc length

F. Simple differential equations with initial conditions

IV. INFINITE SERIES

A. Definition of convergence and divergence of sequences

B. Definition of convergence and divergence of series

C. Tests for convergence of series of positive terms (comparison, ratio, integral)

D. Absolute convergence

E. Interval of convergence of power series in x-a

F. Operations with power series (addition, multiplication, differentiation, integration)

G. Expansion of functions by McLaurin's and Taylor's series

H. Application of series expansion to calculation of definite integrals, e, π, and table of values for transcendental functions

V. MULTIPLE INTEGRALS AND PARTIAL DERIVATIVES

A. Differential calculus of functions of several variables — functions of several variables, limits of functions, partial derivatives, directional derivatives, differentials, tangent lines of spare curves, tangent planes of surfaces, extrema, velocity, and acceleration vectors

B. Integration of functions of several variables — double and triple integrals, repeated integrals, volumes, centroids and moments of inertia, surface area, and arc length

Suggested Study Aids

1. The courses, *Analytic Geometry and Calculus: First semester* and *Analytic Geometry and Calculus: Second semester,* will be offered by the Independent Study Program of State University of New York (See page 14).

2. *A Course in Advanced Placement Analytic Geometry and Calculus,* University Extension Division, The University of Nebraska, Lincoln, Nebraska 68508.

This home study course is given, through correspondence, by qualified instructors of the Extension Division of the University of Nebraska. Information on tuition and on textbook costs can be obtained from the University of Nebraska.

The course outline (syllabus) *without any instruction* is available from the Extension Division for $3.

3. The University of the Air (See pages 15-16) will present a course in Calculus which will closely parallel the CPE in Calculus.

CPE COMMITTEE IN MATHEMATICS

Ralph Beaver, State University of New York at Albany
Mary Dolciani, Hunter College, Chairman
A. George Davis, Clarkson College of Technology
Brewster Gere, Hamilton College
Bennington Gill, The City College

CHEMISTRY

Recommended credits: 6

The College Proficiency Examination in Chemistry is based upon the introductory course in college chemistry for students planning to do advanced study in chemistry or other sciences. In addition to the usual 3 hours of lecture a week, chemistry courses generally require 3-4 hours a week in the laboratory.

Objectives

A central concern of the examination is the candidate's knowledge of and ability to apply a broad range of chemical principles. The ability to recognize and apply principles to specific situations is important and emphasis is also given to the application of principles in the solving of numerical problems. In testing this skill, the method of solution, the correctness of its logic, and the use of appropriate units are considered important. In evaluating the candidate's knowledge of chemical principles, attention is given to his awareness of them in the contest of scientific development and change, indicated by such things as ability to distinguish theoretical inferences from observed facts, to provide intuitive predictions concerning unfamiliar chemical systems or to recognize the limitations of established theoretical models.

An effective working knowledge of chemistry requires a knowledge of facts as well as of principles, and the examination includes questions designed to test the candidate's ability to recall some descriptive and other factual information. The list under "Inorganic Chemistry" (part VI, page 70) is intended to provide an idea of the details expected. Factual information retained from alert attention to laboratory observational experience is also considered important. Since in most precise statements of chemical fact chemical nomenclature plays an important role, the ability to apply general rules of nomenclature to specific situations is considered an important skill.

Specific questions on laboratory may be included and knowledge derived from the laboratory will be important in answering questions on many of the topics listed below. (See also, "Do Colleges Establish Other Requirements for Credit?", pp. 7 and 8.)

Content

I. THERMODYNAMIC PRINCIPLES*

A. Equilibrium — knowledge of state parameters (energy, enthalpy, entropy, free energy); gaseous equilibria; heterogeneous equilibria; aqueous equilibria including K_{diss}, K_{sp}, hydrolysis, pH, stability constants for complex-ions; principle of Le Chatelier; phase equilibria and phase diagrams for one-component systems; colligative properties including Raoult's law, Henry's law, freezing-point depression, boiling point elevation; properties of electrolytic solutions; acid-base relations, including Arrhenius, Bronsted, and Lewis definitions; buffer solutions

B. Thermochemistry — specific heat, calorimetry, heat of reaction, heat of formation, heat of solution, bond energy, lattice energy, energy cycles of the Born-Haber type

C. Electrochemistry — electrolysis, oxidation-reduction, oxidation potentials, Nernst equation, disproportionation, galvanic cells (lead storage battery, dry cell, mercury cell, fuel cell), half-reactions, conductivity

II. KINETIC PRINCIPLES

Rate laws both in terms of derivation from experimental data and in terms of mathematical statement; reaction mechanisms; potential energy diagrams, including transition state; catalysis

III. STRUCTURAL PRINCIPLES

Fundamental particles (β^+, β^-, proton, neutron); types of radioactivity (α, β, γ, K-capture) α-scattering; nuclear energy; composition of nuclei and nuclear transformations (mass number, atomic number); isotopes; X-rays; periodic table; electron configurations; atomic spectro; quantization of energy; quantum numbers (n, l, m_l, m_s); subshells (s, p, d, f); electron probability distributions; paramagnetism; electron affinity; ionization energy; bond types and bond polarity; σ bonds; π bonds; electronegativity; resonance; molecular orbital theory, octet rule; dipole moments; molecular symmetry in relation to polarity; van der Waals forces; hydrogen-bonding; complex-ion formation and stereochemistry; ligandfield theory; metallic state and conductivity; alloys; orbitals; orbital hybridization; kinetic theory

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* The term "thermodynamic" is used here as a convenient designation for a broad class of chemical principles, and is not intended to convey the impression that the logical development of the science of thermodynamics is itself included in the examination materials.

IV. STOICHIOMETRIC PRINCIPLES

Chemical combination; atomic weights; mole, molecular weights, symbolism; nomenclature, including naming of complex-ions; equation-writing; equation-balancing; oxidation number and oxidation state; formula writing; empirical and molecular formulas; gas laws; solution concentrations (molarity, molality, normality, mole fraction); Avogadro number; significant figures; dimensional analyses

V. ORGANIC CHEMISTRY

Isomerism, including chain-branching, position isomerism, optical activity, functional groups; substitution and addition reactions; polymerization; reactions of the simpler functional groups

VI. INORGANIC CHEMISTRY

Descriptive chemistry, with primary emphasis on the halogen elements, nitrogen, oxygen, sulfur, inorganic carbon, alkali and alkaline earth elements, top row transitional elements. No specific scheme of qualitative analysis is assumed, but the simple analytical reactions of the following ions are included: CA^{++}, Mg^{++}, Ba^{++}, Cr^{+3}, Na^{+}, K^{+}, NH_4^{+}, Cu^{++}, Ag^{+}, Pb^{++}, Hg_2^{++}, Sn^{+4}, Hg^{++}, Fe^{+2}, Fe^{+3}, Al^{+3}, Zn^{++}, No_3^{-}, SO_4^{--}, SO_3^{--}, Cl^{-}, CO_3^{--}, Br^{-}, I^{-}

CPE COMMITTEE IN CHEMISTRY

Francis Bonner, State University of New York at Stony Brook
Frank Brescia, The City College
Harold Faigenbaum, Rensselaer Polytechnic Institute
Edward J. King, Barnard College
Arthur O. Long, State University of New York at Albany
Michell Sienko, Cornell University, Chairman

CRIMINOLOGY

Recommended credits: 3

The College Proficiency Examination in Criminology is based upon the one-semester college course in criminology.

Content

I. THE PROBLEM OF CRIME

- **A.** Definition of crime; legalistic; injurious behavior; moral prescription
- **B.** The criminal; legal definition; legal responsibilities with relation to psychotics, mental defectives, children
- **C.** Extent of crime; crimes reported to police, social cost of crime

II. RECORDS AND REPORTING

- **A.** Sources; uniform crime reports; court statistics; crime commission reports
- **B.** Limitations of criminal statistics, immediacy of data
- **C.** Impact of data processing; other recommendations for improving crime reporting

III. CRIME AREAS

- **A.** Against persons
- **B.** Against property
- **C.** Juvenile delinquency
- **D.** Organized crime
- **E.** White-collar crime
- **F.** Narcotics
- **G.** Alcohol
- **H.** Petty offenses
- **I.** Sex offenses
- **J.** Civil disobedience

IV. THEORIES OF CRIME BEHAVIOR

- **A.** Predeterministic theories; demonological possession; hedonistic theories
- **B.** Deterministic theories; physiology (phrenology, endocrinology, physical types, criminal anthropology); psychological (mental defectives, psychotics, sociopaths, emotionally disturbed); sociocultural (economics, race ecology, differential association, anomie, gang theory)

V. SOCIETY REACTIONS TO CRIME

- A. Retribution; deterrence; incapacitation; rehabilitation; difficulties in reconciliation and effectuation of these objectives
- B. Process of criminal justice; arrest; prearraignment detention; indictment; trial; probation; imprisonment; parole; aftercare

CPE COMMITTEE IN CRIMINOLOGY

William Brown, State University of New York at Albany, School of Criminal Justice
Charles McKendrick, Eastern Correctional Institution
Henry J. Noble, John Jay College of Criminal Justice
Herman Sapier, New Hampton Training School for Boys

EARTH SCIENCE

Recommended credits: 6

The College Proficiency Examination in Earth Science will expect the candidate to demonstrate his knowledge and understanding of each of the content areas below. Emphasis will be upon the relationships and interactions among the various areas which make up the earth sciences.

Objectives

The candidate should be able to:

A. Recall and use factual knowledge
B. Interpret data and make inferences
C. Solve problems including the manipulation of numerical data and the reading and interpretation of graphs, weather, oceanographic, and geologic maps and cross sections
D. Identify contributions of major earth scientists
E. Devise experiments to demonstrate principles and to solve specified problems in earth science
F. Demonstrate familiarity with major instruments and methods.

Content

I. EARTH AND THE UNIVERSE

relative dimensions and organization of galaxies, stars, planets; starlight; motion; masses; radiation; variable and multiple cluster stars; origin and development of stars; nebulae; solar features and activity; sun as a source of energy; solar system's members, real and apparent motions; meteorites

II. EARTH AS A PLANET

size, shape, mass; latitude, longitude, time; proofs and consequences of rotation (coriolis effect); revolution; earth-moon relations (tides, eclipses); geographic distribution of gravity and magnetic field; conditions for orbiting satellites; illumination, time, dimension

III. THE SOLID EARTH

mineral structures and properties; rock composition, texture; principles of rock classification; making and interpretation of geologic and topographic maps; construction of cross sections; earth model, structure and composition of earth's interior

IV. EARTH'S ENVELOPES

layers of atmosphere; heat budget; radiation balance; atmospheric composition, structure and circulation; oceanic circulation; elements of weather, clouds, form of precipitation, air masses, fronts, storms; weather map interpretation; regional climate

V. EARTH'S PROCESSES

water cycle, rock cycle, energy exchange, geomorphology, tectonics, vulcanism; rock weathering; soils; erosion; sediment transport; deposition, lithification; metamorphism; biological processes; glaciation; earthquakes; faulting; folding

VI. EARTH'S PAST

origins and evolution of life, historical geology, ancient climates, atmosphere, oceans, solar systems; geochronology, radiometric dating; superposition; continental development, faunal succession, stratigraphic interpretation

CPE COMMITTEE IN EARTH SCIENCE

Arthur Bloom, Cornell University
Kenneth Franklin, Hayden Planetarium
Narayan Gokhale, State University of New York at Albany
Samuel Katz, Rensselaer Polytechnic Institute
Richard Ordway, State University College at New Paltz
William Romey, Syracuse University, Chairman
Robert Sutton, The University of Rochester

ECONOMICS

Recommended credits: 6

The College Proficiency Examination in Economics is based upon the introductory course in college economics.

The candidate will be examined on his understanding of basic concepts such as opportunity cost, elasticity of demand, and monopoly, and on his comprehension of basic theories such as those concerning monopolistic competition, marginal productivity, and the multiplier. He will be expected to know about economic institutions, including, for example, the structure of labor unions and the process of collective bargaining, and will be tested on his familiarity with basic developments of economic history, such as the Industrial Revolution and the rise of the modern corporation. His knowledge of economic data and trends, such as the approximate size of the gross national product or the relative importance of agricultural workers in the labor force, should be sufficient to afford him a general notion of the size and behavior of the national economy and its major segments.

The candidate should be able to demonstrate his ability to use his knowledge to analyze economic data and relationships, to identify the nature and significance of economic issues and their interrelationships, to deal with issues of public policy, and to recognize the significance of noneconomic (e.g., political, psychological, cultural, etc.) factors in public issues and problems. He should also be able to show that he can distinguish between verifiable propositions and judgments which are not susceptible to empirical test, and between facts which are relevant to a particular proposition and those which are not.

Suggested Study Aids

1. The courses, Principles of Economics (First semester) and Principles of Economics (Second semester) will be offered by the Independent Study Program of State University of New York (see page 14).

2. A pamphlet "The World of Economics" by Robert L. Heilbronner is available for $.60 from the American Library Association Public Affairs Pamphlet, 381 Park Avenue S., New York, New York 10016.

CPE COMMITTEE IN ECONOMICS

William Bennett, Union College
Arthur Butler, State University of New York at Buffalo
Robert Ferguson, Cornell University
Edwin Holstein, Rensselaer Polytechnic Institute
Louis Salkever, State University of New York at Albany,
Chairman
A. Dale Tussing, Syracuse University

EDUCATIONAL PSYCHOLOGY

Recommended credits: 6

The College Proficiency Examination in Educational Psychology is based upon an introductory college course in educational psychology or in psychological foundations of education and is designed to test an understanding of basic psychological principles.

Objectives

The candidate will be expected to demonstrate:

I. A knowledge of key terms and concepts and important persons associated with particular investigations or points of view

II. The ability to read and use psychological information

III. An acquaintance with key experimental and empirical studies which provide the basis for generalizations and principles of educational psychology and ability to interpret findings and apply them to specific classroom situations

IV. Knowledge of principles, generalizations and dominant theories; understanding of how they operate in actual practice; and ability to apply them to classroom situations

Content

I. Development and maturation including: principles of development, readiness, heredity and environment, personality factors associated with maturation, social-emotional development

II. Learning including: learning process, retention and forgetting, transfer, learning of concepts, attitudes and skills

III. Personality structure and organization including: motivation, self-concept, social-class influences, theories of personality, mental health, prejudices

IV. Environmental factors including: family climate, peer-group influence, school climates, teacher personality

V. Measurement including: elementary statistical concepts, general characteristics and types of test scores, teacher evaluation of pupils, standardized tests

CPE COMMITTEE IN EDUCATIONAL PSYCHOLOGY

Howard Berkowitz, State University College at Oneonta
Gordon Fifer, Hunter College
Richard Ripple, Cornell University
John Rosenbach, State University of New York at Albany
Sister Mary Gertrude, College of Mount Saint Vincent
Marvin Taylor, Queens College, Chairman

ENGINEERING GRAPHICS A: Drawing for Design

Recommended credits: 3-4

The College Proficiency Examination in Engineering Graphics A is based upon an introductory one-semester college course in drawing for design.

Content

I. THEORIES OF PROJECTION

- **A.** orthographic (principal and auxiliary)
- **B.** visualization (reading of drawings)
- **C.** axonometric (iso-, di-, tri-)
- **D.** oblique (cabinet and cavalier)
- **E.** perspective systems

II. DRAWING FOR DESIGN, DESCRIPTION, AND COMMUNICATION

- **A.** design concepts
- **B.** function, manufactureability, reliability, and economy
- **C.** use of standard parts and/or methods (such as threads and fasteners)
- **D.** choice of scales and arrangement of views
- **E.** detail drawings
- **F.** dimensioning, notes and tolerance (interchangeable assemblies)
- **G.** assembly drawings (list of parts, revisions, and material specifications)
- **H.** industrial and military standards
- **I.** sections
- **J.** conventions and simplifications
- **K.** reproduction processes

III. TECHNIQUES

- **A.** sketching
- **B.** line terminology
- **C.** use of instruments and drawing media
- **D.** geometric constructions
- **E.** lettering

IV. SPECIAL PURPOSE DRAWINGS

- **A.** graphs, charts, and diagrams

- **B.** topographic mapping
- **C.** miscellaneous
  1. aircraft drafting
  2. architectural drawings
  3. electrical diagrams
  4. exploded views
  5. patent drawings
  6. piping layouts
  7. sheet metal drafting
  8. structural drafting

ENGINEERING GRAPHICS B: Drawing for Analysis and Synthesis

Recommended credits: 3-6

The College Proficiency Examination in Engineering Graphics B is based upon material taught in a one-semester college course in drawing for analysis and synthesis. The examination will include the four content areas covered in Engineering Graphics A and, also, descriptive geometry and graphical mathematics.

Content

I-IV. SEE EXAMINATION DESCRIPTION FOR ENGINEERING GRAPHICS A

V. DESCRIPTIVE GEOMETRY

- **A.** Spatial orientation
- **B.** True size projection
  1. length of lines
  2. shape of surfaces
     - *a.* by projection
     - *b.* by development
       - i) triangular
       - ii) other
- **C.** Intersections
  1. line and plane
  2. plane and plane
  3. other surfaces
- **D.** Perpendicularity and parallelism
- **E.** Cone locus (trial lines)

F. Special applications
   1. vectors
   2. space curves
   3. photogrammetry
   4. geodesics
   5. packing
   6. nonmetrical (i.e., DeSargues Theorem)
   7. space structures

VI. GRAPHICAL MATHEMATICS

A. Functional scales (comparative, log, etc.)

B. Solutions of equations (arithmetic, algebraic, calculus, etc.)

C. Nomography and alignment charts

D. Computer-aided design (Coordinate Systems)

CPE COMMITTEE IN ENGINEERING GRAPHICS

Mary Blade, Cooper Union, Chairman
Carson Buck, Syracuse University
Harold Howe, Rensselaer Polytechnic Institute
William B. Rogers (Lt. Col.), United States Military Academy, West Point
Yonny Segal, Bronx Community College

EUROPEAN HISTORY

Recommended credits: 6

The College Proficiency Examination in European History is based upon the introductory two-semester college course in modern European history.

Objectives

The candidate will be expected to demonstrate:

I. A knowledge of the general narrative and the specific major details of European history from 1450 to the present. He should be aware of the general facts of medieval history insofar as these serve as a prologue to modern European history.

II. An ability to see facts of history in context; interpret, explain, and relate historical movements; distinguish causes, results, and significances; read historical materials in a discriminating way; and weigh evidence and reach conclusion on the basis of facts. A person with an adequate knowledge and understanding of history is expected to write with economy, grace, and above all, with relevance. (See also, "Do Colleges Establish Other Requirements for Credit?", p. 14.)

Content

I. Prologue: the later Middle Ages

- **A.** The medieval background: village economy and manorial organization; feudal relations and the structure of feudal monarchies; the universal church; technological changes; commerce and towns; the social hierarchy; intellectual and artistic developments
- **B.** The Renaissance in Italy prior to 1500: individualism, secularization, humanism, and art

II. 1500–1660

- **A.** The Renaissance in Italy and Northern Europe after 1500
- **B.** The Protestant Reformation and Catholic reform
- **C.** The emergence of the modern state
- **D.** Religious and dynastic wars

- **E.** European discovery and expansion overseas
- **F.** Economic change and the development of mercantilism
- **G.** Continental absolutism and constitutional conflicts in England

III. 1660–1789

- **A.** The continuing growth of mercantilism and capitalistic society
- **B.** Constitutional developments in Great Britain
- **C.** The age of Louis XIV
- **D.** The rise of Prussia and Russia; the consolidation of Austria
- **E.** The scientific revolution, Copernicus to Newton; the Enlightenment
- **F.** The enlightened despots and the bureaucratic state
- **G.** The balance of power in Europe and overseas
- **H.** The *ancien régime* and the background of the French Revolution

IV. 1789–1870

- **A.** The French Revolution; Napoleon and the French imperium
- **B.** The age of Metternich
- **C.** The industrial transformation of Europe
- **D.** Romanticism, nationalism, liberalism, and socialism (Utopian and Marxian)
- **E.** The revolutions of 1848
- **F.** Unification movements
- **G.** Political and social developments to 1870
- **H.** Science and thought

V. 1870–1945

- **A.** The new imperialism
- **B.** Changing concepts of the universe, man, society, and the arts
- **C.** The expanding role of government in society

D. The background and results of the First World War; the search for security
E. The Russian Revolution and the rise of communism
F. Fascist regimes
G. Impact of the worldwide depression
H. The background and outcome of the Second World War
I. The growth of parliamentary democracy

VI. Epilogue: Europe from 1945 to 1955

A. The spread of communism and the cold war
B. Reconstruction and cooperation in Western Europe
C. The end of colonial empires
D. Europe and the United Nations

Suggested Study Aids

A Course in Advanced Placement European History, University Extension Division, The University of Nebraska, Lincoln, Nebraska 68508.

This home study course is given, through correspondence, by qualified instructors of the Extension Division of the University of Nebraska. Information on tuition and on textbook costs can be obtained from the University of Nebraska.

The course outline (syllabus) *without any instruction* is available from the Extension Division for $3.

CPE COMMITTEE IN EUROPEAN HISTORY

Evelyn Acomb, State University College at New Paltz
Robert Carlisle, St. Lawrence University
Elisa Carrillo, Marymount College
Raymond O. Rockwood, Colgate University, Chairman
Nancy Struever, Hobart and William Smith Colleges

FOREIGN LANGUAGES

French, German, Italian, Russian, Spanish

*Recommended Credit**

The proficiency tests in the foreign languages are now administered at centers throughout the United States by Educational Testing Service. The fee for the complete battery (seven subtests) is $18; Part A—$14, Part B—$10.

Requests for further information and applications should be addressed to: Program Director, MLA Foreign Language Proficiency Tests Educational Testing Service, Princeton, New Jersey 08540.

*The foreign language examinations are not designed to cover a specific course or courses but, rather, are intended to test a relatively high level of language competency that would encompass work covered in several courses, including those of an advanced nature. Each college, therefore, can best determine the amount of credit it will grant for various levels of performance on the examinations.

Depending on the scores achieved, the State Education Department will recognize satisfactory performance in lieu of as many as 42 course credits (language and teaching methods) toward the foreign language teaching certificate. Since there are other requirements to be met in order to be certified to teach a foreign language in the public schools of New York State, no candidate should assume that he or she will be awarded a teaching certificate simply on the basis of high scores on the foreign language examinations.

CPE COMMITTEE IN FOREIGN LANGUAGES

John E. Allen, III, New York University
Joseph Astman, Hofstra University, Chairman
Italo Ponterotto, Iona College
Mario Saltarelli, Cornell University
Gordon Silber, State University of New York at Albany

FRESHMAN ENGLISH

Recommended credits: 6

The College Proficiency Examination in Freshman English is designed to test the candidate's knowledge and understanding of literature and his ability to write a good composition. The examination assumes preparation equivalent to that of the student who has taken the one-year course in freshman English commonly offered in colleges and universities in New York State.

Objectives

The candidate will be expected to demonstrate his knowledge of literary terminology and other aspects of expression (such as euphony, irony, etc.) and to be able to illustrate these effectively in writing, especially concerning works from the reading list. He will also be expected to be familiar in detail with all literature listed on the reading list and be able to compare and contrast different characteristics of these works.

Content

I. COMPOSITION

A. Correctness of Expression

1. grammar
2. punctuation
3. spelling

B. Effectiveness of Expression

1. organization and development in sentences, paragraphs, and entire composition
    - *a.* unity
    - *b.* coherence
    - *c.* emphasis
2. Diction
    - *a.* appropriateness (formal or informal)
    - *b.* precision
    - *c.* connotation
    - *d.* denotation
    - *e.* freshness (avoidance of the trite or the cliché)

    - *f.* concreteness
    - *g.* abstraction
  - 3. Other aspects of style
    - *a.* figures of speech
    - *b.* variety in sentence length and pattern
    - *c.* tone
    - *d.* euphony
    - *e.* irony

II. LITERATURE

A. Essays

(See relevant items under Fiction.)

B. Fiction

1. point of view
2. structure
3. theme
4. plot
   - *a.* exposition
   - *b.* climax
   - *c.* denouement
5. characterization
6. dialogue
7. methods for representing thoughts, such as stream of consciousness
8. symbolism

C. Poetry

1. basic terms and concepts of prosody
   Examples:
   - *a.* Standard meters
   - *b.* Most commonly used verse forms
     (stanza forms: sonnets, ballads, etc.)
   - *c.* Sound effects (alliteration, assonance, rhyme, etc.)
2. knowledge of and ability to mark rhyme schemes and scansion

D. Drama

1. methods of achieving effectiveness which drama has in common with fiction and poetry
2. methods of achieving the effects peculiar to drama
3. (See relevant items under Fiction.)

Preparatory Reading

The candidate will be expected to be familiar in detail with all of the following works. As he reads or reviews these works he should keep in mind that the examination will put particular emphasis on the items listed above under *II Literature.*

I. ESSAYS

- **A.** Franklin, Benjamin
    - ***Autobiography***
- **B.** Huxley, Aldous
    1. "Comfort"
    2. "Vulgarity in Literature"
- **C.** Mencken, Henry L.
    1. "On Being an American"
    2. "The Sahara of the Bozart"
- **D.** Orwell, George
    1. "Politics and the English Language"
    2. "Shooting an Elephant"
- **E.** Thoreau, Henry David
    - ***Walden***

II. FICTION

- **A.** Joyce, James (from *Dubliners*)
    1. "A Little Cloud"
    2. "Clay"
- **B.** Salinger, Jerome D. (from *Nine Stories*)
    1. "For Esme With Love and Squalor"
    2. "Down at the Dinghy"

C. Thackeray, William
Vanity Fair

III. POETRY

A. Ballad
"Sir Patrick Spens"

B. Browning, Robert
1. "My Last Duchess"
2. "Soliloquy of the Spanish Cloister"

C. Cummings, E. E.
"Anyone Lived in a Pretty How Town"

D. Dickinson, Emily
1. "Pain has an element of blank"
2. "The Brain within its Groove"
3. "Because I could not stop for Death"
4. "Success is counted sweetest"

E. Donne, John
"A Valediction Forbidding Mourning"

F. Eliot, Thomas Stearns
"The Love Song of J. Alfred Prufrock"

G. Frost, Robert
1. " 'Out, Out' "
2. "An Old Man's Winter Night"
3. "A Hundred Collars"
4. "Two Tramps in Mud Time"
5. "The Oven Bird"
6. "The Silken Tent"
7. "The Hill Wife"
8. "Stopping by Woods on a Snowy Evening"

H. Herbert, George
"The Collar"

I. Herrick, Robert
"Upon Juliet's Clothes"

J. Keats, John
1. "The Eve of St. Agnes"
2. "Ode to a Nightingale"
3. "On First Looking Into Chapman's Homer"
4. "When I Have Fears That I May Cease To Be"

K. Lanier, Sidney
"The Revenge of Hamish"

L. McCrae, John
"In Flanders Fields"

M. Milton, John
"On His Blindness"

N. Parker, Dorothy
"One Perfect Rose"

O. Poe, Edgar Allan
1. "Ulalume"
2. "The Raven"

P. Pope, Alexander
"The Rape of the Lock"

Q. Shakespeare, William
1. "Let me not to the marriage of true minds"
2. "That time of year thou mayst in me behold"
3. "My mistress' eyes are nothing like the sun"
4. "Not marble, nor the gilded monuments"
5. "When in disgrace with fortune and men's eyes"

R. Thayer, Ernest Lawrence
"Casey at the Bat"

S. Whitman, Walt
"When I Heard the Learn'd Astronomer"

T. Williams, William Carlos
"This is just to say"

IV. DRAMA

A. Ibsen, Henrik
The Wild Duck

B. Shakespeare, William
Antony and Cleopatra

C. Shaw, George Bernard
Caesar and Cleopatra

D. Sophocles
Oedipus Rex

E. Williams, Tennessee
The Glass Menagerie

Suggested Study Aids

1. The course, *Freshman Composition and Literature* will be offered by the Independent Study Program of the State University of New York (see page 14).

2. *An Advanced Placement Course in English: Poetry Analysis and Composition,* University Extension Division, The University of Nebraska, Lincoln, Nebraska 68508.

This home study course is given, through correspondence, by qualified instructors of the Extension Division of the University of Nebraska. Information on tuition and on textbook costs can be obtained from the University of Nebraska.

The course outline (syllabus) *without any instruction* is available from the Extension Division for $3.

CPE COMMITTEE IN FRESHMAN ENGLISH

Jeane H. Geehr, Vassar College
William Green, Queens College
Jonathan H. Kistler, Colgate University, Chairman
Townsend Rich, State University of New York at Albany
Hal H. Smith, College of Insurance

GEOLOGY

Recommended credits: 6

The College Proficiency Examination in Geology is based upon an introductory two-semester college course in geology.

In addition to testing the ability of the candidate to recognize concepts in geology and to apply them, the CPE in Geology is designed to evaluate the candidate's ability to handle topographic and geologic maps and columnar and cross sections.

Content

I. PHYSICAL GEOLOGY
   - **A.** Energy considerations
   - **B.** Matter considerations
      1. minerals
      2. rocks
   - **C.** The Earth in space, form, motions, interior
   - **D.** Gradational processes and agents: streams, glaciers, wind, lakes, oceans, subsurface water, mass wasting, weathering
   - **E.** Vulcanism
   - **F.** Diastrophism
   - **G.** Metamorphism

II. HISTORICAL GEOLOGY
   - **A.** Methods of study
   - **B.** History of geology
   - **C.** Precambrian
   - **D.** Paleozoic Era
   - **E.** Mesozoic Era
   - **F.** Cenozoic Era

Suggested Study Aids

The course, *Geology,* will be offered by the Independent Study Program of the State University of New York (see page 14).

CPE COMMITTEE IN GEOLOGY

Arthur Bloom, Cornell University
Kenneth Franklin, Hayden Planetarium
Narayan Gokhale, State University of New York at Albany
Richard Ordway, State University College at New Paltz
William Romey, Syracuse University, Chairman
Robert Sutton, The University of Rochester

NURSING SCIENCES: Maternal and Child Nursing

Recommended credits: 6-12

The CPE in Maternal and Child Nursing is designed to test the candidate's knowledge and understanding of maternal and child nursing. The emphasis is placed upon the application of theory to the nursing situation.

The candidate should be prepared to demonstrate

1. a knowledge of facts, trends, and terminology related to the content areas listed below
2. the ability to recognize and apply principles and theories to a variety of nursing situations
3. the ability to use a problem-solving approach in assessing nursing situations and in making judgments concerning appropriate nursing intervention.

Content

I. MATERNAL NURSING

- **A.** Antepartal period
    1. Manifestations of pregnancy
    2. Impact of pregnancy on mother and family
    3. Management of the pregnant patient
    4. Trends in maternal care

- **B.** Intrapartal period
    1. Normal labor process
    2. Complications of labor
    3. Operative obstetrics
    4. Management of the labor patient

- **C.** Postpartal period
    1. Psycho-physiological adaptations
    2. Complications of puerperium
    3. Management of postpartal patient
    4. Family planning

- **D.** Newborn period
    1. The normal newborn
    2. Complications within the newborn period

   3. Prematurity
   4. Management of the newborn period

II. CHILD NURSING

- A. The infant (birth to 1 year)
  1. Family relationships
  2. Acute medical and surgical conditions
  3. Longterm medical and surgical conditions
  4. Health supervision

- B. The young child (1–5 years)
  1. Family relationships
  2. Medical-surgical conditions
  3. Effects of illness
  4. Health supervision

- C. The school-age child (6–12 years)
  1. Interpersonal relationships
  2. Medical-surgical conditions
  3. Effects of illness
  4. Health supervision

- D. The adolescent (13–21 years)
  1. Family relationships
  2. Psycho-social and psycho-sexual needs and problems
  3. Common health problems
  4. Health supervision

CPE COMMITTEE IN MATERNAL AND CHILD NURSING

Mary Norma O'Hara, State University of New York at Buffalo
Cornelia Porter, The University of Rochester
Arlene Sherman, State University College at Plattsburgh
Rosemary Starkman, Skidmore College
Marie Strickland, Cornell University — New York Hospital
Rosalind Wang, Russell Sage College

NURSING SCIENCES: Medical-Surgical Nursing

Recommended credits: 8–12

The emphasis of the College Proficiency Examination in Medical-Surgical Nursing will be on the nursing process. The candidate will be expected to

1. know specific facts, principles, and theories
2. assess situations by analysis and synthesis
3. apply good nursing principles
4. evaluate situations as to their effectiveness and implications

Content

I. METABOLISM
- **A.** Oxidation
    1. Internal
    2. External
- **B.** Hydration
    1. Dehydration
    2. Congestion
- **C.** Nutrition
    1. Excess
    2. Deficiency

II. MOTILITY
- **A.** Skeletal movement
    1. Neuro-muscular
- **B.** Nerve Control
    1. Impulses
- **C.** Flow and Pressure
    1. Circulations
    2. Lymphatic
    3. Shock

III. TISSUE TRAUMA
- **A.** Irritation-inflammation
    1. Resolution

- **B.** Infection
- **C.** Change of Tissue Activity
  1. Hypo-
     - a) Aging
  2. Hyper-
- **D.** Change of Function
  1. Hypo-
  2. Hyper-

IV. SENSATION

- **A.** Special Senses
  1. Hypo-
  2. Hyper-
- **B.** Receptors
  1. Hypo-
  2. Hyper-

V. BEHAVIOR

- **A.** Integrative
  1. Intellectual
  2. Personality
- **B.** Physiological Factors
  1. Stress
  2. Change of organic functions
- **C.** Psychological
  1. Adaptation

CPE COMMITTEE IN MEDICAL-SURGICAL NURSING

Erma Bahrenburg, Adelphi University
Margaret Cotterell, Cornell University—New York Hospital
Marjory Keenan, Russell Sage College
Madeleine Kennedy, The University of Rochester
Edith Schmitt, Wagner College

NURSING SCIENCES: Psychiatric-Mental Health Nursing

Recommended credits: 6

The emphasis in the College Proficiency Examination in Psychiatric/Mental Health Nursing is placed upon the application of theory to the nursing situation. The candidate should be prepared to demonstrate

1. a knowledge of facts, trends, and terminology related to the content areas listed below
2. the ability to recognize and apply principles and theories to a variety of nursing situations
3. the ability to utilize a problem-solving approach in assessing nursing situations and in making judgments concerning appropriate nursing intervention.

Content

I. PERSONALITY DEVELOPMENT

- **A.** Developmental goals at particular stages
- **B.** Early family relationships
- **C.** Basic human needs
- **D.** Development of self-concept
- **E.** Adaptive processes
- **F.** Specific mechanisms
- **G.** Possible determinants of behavior
- **H.** Conflicts

II. NATURE OF ANXIETY

- **A.** Definition
- **B.** Origins of anxiety
- **C.** Physiological, mental, and behavioral signs
- **D.** Normal vs. neurotic
- **E.** Methods of coping with anxiety

III. INTERPERSONAL RELATIONSHIPS

- **A.** Reciprocal nature of
- **B.** The psychiatric nurse
  1. Role with patients and co-workers
  2. Interpersonal functions
  3. Needed qualities and attitudes

4. Skills and abilities
    - *a.* Methods of thinking
        - (1) Critical
        - (2) Knowledgeable
        - (3) Goal-directed
    - *b.* Ability to recognize meanings underlying overt behavior (in self and others)

IV. COMMUNICATION PROCESS

- **A.** Definition
- **B.** Kinds of communication
- **C.** Specific communication skills
- **D.** Use of communication skills

V. TYPES OF THERAPY

- **A.** Somatic
- **B.** Psycho-therapeutic

VI. PATIENT'S HOSPITAL WORLD

- **A.** Characteristics and problems of the hospital environment
    1. Custodial hospitals
    2. Therapeutic community
- **B.** Patient adjustment to hospital environment
    1. Patient's hospital world
    2. Negative aspects of patient adjustment
    3. Positive aspects of patient adjustment
- **C.** Therapeutic use of the patient's environment
    1. Concept of therapeutic milieu
    2. Application of concepts of therapeutic milieu

VII. PROBLEMS IN ADAPTATION

- **A.** Patient behaviors which create nursing problems in psychiatric and non-psychiatric settings
- **B.** Specific problems
- **C.** Major defenses used in adaptation
    1. Patterns of adaptation
    2. Major defenses used in adaptation and their signs

VIII. **NURSING INTERVENTION**
  - A. Nurse-patient relationships
  - B. Principles of problem solving
  - C. Skills needed

IX. **ROLE OF NURSE IN PROMOTING MENTAL HEALTH**

X. **RELATIONS WITH HELPING PROFESSIONS**

CPE COMMITTEE IN PSYCHIATRIC/MENTAL HEALTH NURSING

Ruth Angelus, Cornell University — New York Hospital
Kirstan Burke, The University of Rochester
Marion LeCompte, Russell Sage College
Eugene Martin, New York University
Juanita Wilson, Adelphi University

PHILOSOPHY OF EDUCATION

Recommended credits: 6

The College Proficiency Examination in Philosophy of Education assumes preparation equivalent to that of the student who has taken a two-semester college course in philosophy of education (or a one-semester college course carrying up to six semester hours of credit).

Objectives

The examination is designed to test the candidate's ability to deal philosophically with significant and continuing issues in the educational domain. It will measure his knowledge and understanding of major works in philosophy which shed light on aspects of the problems in education. It demands the ability to identify the philosophic dimension of persisting issues and problems, to frame relevant philosophic questions, and to conceptualize such issues and problems within the context of the history of ideas. The candidate's facility in handling the philosopher's distinctive tools, and his familiarity with philosophic terminology, conceptual apparatus, and methods will also be examined.

Content

I. The candidate will be expected to know the following works of Plato and Dewey and with at least one of the other works in the following list:

- **A.** Plato. *Meno, The Republic*
- **B.** Aristotle. *Politics* (Books V, VI, VII, VIII); Nichomachean Ethics (Book VI)
- **C.** John Locke. *Some Thoughts Concerning Education; An Essay Concerning Human Understanding* (Books I–IV)
- **D.** Jean Jacques Rousseau. *Emile*
- **E.** John Dewey. *Experience and Education; School and Society*
- **F.** Alfred North Whitehead. *The Aims of Education*
- **G.** Jacques Maritain. *Education at the Crossroads*
- **H.** Gilbert Ryle. *Concept of Mind*

II. The candidate will be expected to deal philosophically with such educational issues and problems as:

- **A.** Education and the school in relation to society and culture
- **B.** Teacher and learner: Their natures as human beings, as social organisms, as citizens
- **C.** The concepts of **teaching** and **learning**
- **D.** Curriculum: The selection and ordering of content
- **E.** Methods of teaching: Logical and psychological approaches
- **F.** Conditions of schooling: Organization, administration, control, professionalization
- **G.** Approaches to the determination of educational aims

III. The candidate should be familiar with, and be able to apply to educational issues, the basic conceptual apparatus of contemporary philosophy. He should:

- **A.** Be able to make use of counter-examples in the clarification of an issue, and to deal appropriately with tautologies, ambiguities, and vagueness.
- **B.** Know the major functions and forms of definitions, and be able to make intelligent use of this knowledge.
- **C.** Be familiar with and use the following methods and distinctions:
    1. Methods used in the search for knowledge, including intuition, revelation, consensus, deduction from basic truths, and the scientific, Socratic, and phenomenological methods.
    2. Distinctions between facts and values, induction and deduction, and analytic and synthetic statements.

CPE COMMITTEE IN PHILOSOPHY OF EDUCATION

Morris Berger, State University of New York at Albany
Robert H. Ennis, Cornell University
Joseph S. Probst, Fordham University
Mary Anne Raywid, Hofstra University

PHYSICS

Recommended credits: 6

The College Proficiency Examination in Physics is based upon the introductory college course in physics.

Objectives

The candidate will be expected to:

- **A.** Demonstrate a clear understanding of important physical concepts and principles, together with their restrictions or limitations
- **B.** Read, understand, and interpret physical information, verbal, and mathematical
- **C.** Apply the physical principles which are relevant to a familiar or unfamiliar situation
- **D.** Use elementary mathematical reasoning — arithmetical, algebraic, geometric, and trigonometric — in a physical situation or problem
- **E.** Explain the analysis and reasoning used in solving a particular problem, that is,
  1. state the principles or definitions which are applicable
  2. specify relevant limitations to their application
  3. give the steps of reasoning, either verbally or mathematically
  4. interpret the results or conclusions
- **F.** Recognize the reasons for the acceptance or "truth" of statements, whether by definition, by logical deduction from accepted laws or principles, or by generalization from experimental observations

Knowledge of many detailed topics is less important than the demonstration of a mature understanding of the basic principles and methods of physics. About four-fifths of the questions are from the areas of dynamics, heat and kinetic theory, electromagnetism, atomic physics, and waves. The candidate may expect to find a number of problems in the examination.

No questions which can be answered only by using calculus methods will be asked. In many instances, however, calculus methods may well be used for advantage — for efficiency, to give extra information, or to show competence. Quick, capable use of algebra is a minimum requirement.

(See also, "Do Colleges Establish Other Requirements for Credit?", pp. 7 and 8.)

CPE COMMITTEE IN PHYSICS

Rev. Robert Brennan, LeMoyne College
Everett M. Hafner, The University of Rochester
Clement L. Henshaw, Colgate University
Kenneth Moore, Rensselaer Polytechnic Institute, Chairman
Robert L. Sells, State University College at Geneseo

SHAKESPEARE

Recommended credits: 3–4

The College Proficiency Examination in Shakespeare is based upon a one-semester college course on Shakespeare which is usually taken in the sophomore or junior year.

Objectives

The candidate will primarily be expected to demonstrate an understanding of the plays of Shakespeare and of the significant relationships between them. He will be expected to have knowledge of essential background information: the dates of the plays on the reading list, their sources and their textual history; a familiarity with the life of Shakespeare; and some acquaintance with the customs and conventions of the Elizabethan theater.

He should be prepared to answer factual questions drawn from the background materials or from plays listed below. He will be expected to have sufficient knowledge of details so that he can discuss the plays intelligently and support generalizations and interpretations with specific evidence. The candidate should be able to show how such dramatic and poetic elements as theme, character, plot, language, verse form, and imagery function in the plays and contribute to their total meaning. He should have some familiarity with the conventions of comedy, tragedy, and the history play as reflected in Shakespeare's dramatic art. He should be able to discuss relationships between genre and content. Memorizations of passages will not be required. Knowledge derived from the study of any of the plays of Shakespeare whether on the suggested list or not will be helpful in answering general questions and may be used where appropriate in answering essay questions.

Preparatory Reading

I. Comedies: *A Midsummer Night's Dream*
The Merchant of Venice
Twelfth Night
Measure for Measure
The Tempest

II. Histories: *Richard II*
Henry IV, Part I

III. Tragedies: *Hamlet*
Othello
King Lear
Macbeth
Antony and Cleopatra

There are many good, recent editions of individual plays as well as collections which contain all or most of the plays in this list. Essential background information can be obtained from any good collected text of Shakespeare's work or from a modern handbook on Shakespeare. Such books also contain suggestions for further reading. The candidate will undoubtedly add to his enjoyment and understanding of Shakespeare works if he sees some of the plays or listens to good recordings of them.

CPE COMMITTEE IN SHAKESPEARE

Jeane Geehr, Vassar College
William Green, Queens College
Jonathan Kistler, Colgate University, Chairman
Townsend Rich, State University of New York at Albany
Hal Smith, College of Insurance

SOCIOLOGY

Recommended credits: 6

The College Proficiency Examination in Sociology is based upon a one-year college course in sociology. The examination expects familiarity with the basic concepts and tools of inquiry of sociology and with the major works in the field. It also expects knowledge of sociological generalizations and theory. Finally, there are questions that ask the student to apply his understanding of sociological concepts to new situations.

Content

I. THE SOCIOLOGICAL PERSPECTIVE
- **A.** Sociology versus other social sciences
- **B.** Units of sociological analysis
- **C.** Techniques of investigation
- **D.** Norms of the scientific method

II. SOCIAL ORGANIZATION
- **A.** Social differentiation; stratification and ethnic relations
- **B.** Primary groups
- **C.** Minority groups
- **D.** Voluntary associations
- **E.** Complex organization and bureaucracy

III. SOCIAL INSTITUTIONS
- **A.** The family
- **B.** Religious institutions
- **C.** Political institutions
- **D.** Economic institutions

IV. SOCIAL DISORGANIZATION AND DEVIANT BEHAVIOR
- **A.** Social problems
- **B.** Anomie
- **C.** Cultural conflict

V. SOCIAL PROCESSES
- **A.** Socialization
- **B.** Communication
- **C.** Social change
- **D.** Conflict

Suggested Study Aids

The course, *Introduction to Sociology: Selected Themes,* will be offered by the Independent Study Program of The State University of New York (see page 14).

CPE COMMITTEE IN SOCIOLOGY

Sylvia Fava, Brooklyn College
Sherwood Fox, Union College, Chairman
Dean H. Harper, The University of Rochester
Robert J. Schmidt, Russell Sage College
Seymour Yellin, New York University

STATISTICS

Recommended credits: 3

The College Proficiency Examination in Statistics is based upon a one-semester college course in elementary statistics.

Objectives

The candidate will be expected to demonstrate a knowledge and understanding of basic statistical concepts. The examination will test his ability to recall concepts and perform simple applications (including the solution of numerical problems) of these concepts. In addition, questions are included to allow the candidate to demonstrate both his thorough understanding of these concepts and the logic of elementary statistical theory. This will be partly achieved by asking the candidate to apply his knowledge of statistical concepts and theory in unfamiliar contexts.

The mathematical background required is high school elementary and intermediate algebra. Knowledge of the derivations of formulas generally is not required except when specifically listed in the outline of the examination content.

Content

I. DESCRIPTIVE STATISTICS

- **A.** Elementary operations with summation signs
- **B.** Definitions
  - 1. Empirical frequency distributions
    - *a.* frequency distribution
    - *b.* cumulative frequency distribution
    - *c.* ogive
    - *d.* frequency polygon
    - *e.* histogram
    - *f.* class mark
    - *g.* class boundary
    - *h.* class limits
    - *i.* class frequency
  - 2. Measures of location (central tendency)
    - *a.* arithmetic mean
    - *b.* median
    - *c.* mode
    - *d.* percentiles

3. Measures of dispersion
   - *a.* range
   - *b.* mean deviation
   - *c.* variance and standard deviation
   - *d.* coefficient of (relative) variation
4. Other characteristics of frequency distributions such as skewness and kurtosis

C. Calculation of the arithmetic mean, median, mean deviation, variance, and standard deviation for ungrouped and grouped data. Computation of the mean, standard deviation and variance by "coding" (i.e., use of a linear transformation).

D. Knowledge of the properties, advantages, and limitations of various descriptive measures

E. Definition and properties of a standardized variable (standard score)

II. PROBABILITY

A. Definitions
1. *à priori* probability
2. relative frequency probability
3. subjective probability
4. the concept of "odds"

B. Addition and multiplication rules
1. general additive law and special additive law for mutually exclusive events
2. general multiplication law and special multiplication law for independent events

C. Permutations and combinations
1. permutations of N things in N places
2. permutations of N things in R places with $N > R$
3. permutations of N things when some are alike
4. combinations in selecting R objects from N different objects

D. Probability functions
1. definitions of discrete and continuous probability functions

2. definitions of mean and variance for discrete random variables
3. binomial distribution
    - *a.* knowledge of the formula for the binomial distribution, the assumption underlying it, and its derivation
    - *b.* knowledge of the mean and variance of the binomial distribution
    - *c.* applications
4. normal curve
    - *a.* properties of the curve
    - *b.* applications, including the use of the normal curve as an approximation of the binomial distribution

III. SAMPLING

A. Definitions

1. population
2. sample
3. parameter
4. statistic
5. sampling distribution
6. random sampling from an infinite population

B. Large sample theory as applied to the arithmetic mean

IV. ESTIMATION

A. Concepts of point estimation and interval estimation

B. Knowledge of construction of confidence limits for the population mean based upon large random samples

V. TESTS OF HYPOTHESES

A. Definitions

1. null hypothesis and alternative hypotheses
2. type I error including the concepts of level of significance and critical region
3. type II error including the concept of power
4. one tail and two tail tests

B. Test of a specified population mean with known population standard deviation and very large sample

C. Test of the equality of two population means with known population standard deviations for large samples

VI. "SIMPLE" LINEAR REGRESSION AND CORRELATION

A. Regression

1. knowledge of the meaning, assumptions, and objectives of regression analysis
2. knowledge of the meaning of the principle of least squares
3. use of the method of least squares to find the coefficients of the regression equation
4. related concepts (definitions, uses of and methods of calculation)
    - *a.* total variation, "explained" variation (variation attributable to regression) and "unexplained" variation
    - *b.* error variance and standard error of estimate
    - *c.* coefficient of determination (proportion of total variation which is "explained")
    - *d.* coefficient of correlation interpreted as the square root of the coefficient of determination

B. Product — moment correlation

1. scatter diagram
2. definitional and computational formulas for the product-moment coefficient of correlation
3. relationship between correlation coefficient and the slope of the regression line
4. coefficient of correlation interpreted as the square root of the product of the regression coefficients of y on x and x on y
5. role of the correlation coefficient in the bivariate normal distribution

C. Properties and limitations of the coefficient of correlation, regression coefficients and the standard error of estimate (e.g., the effect of changes of scale, the numerical limits of the correlation coefficient)

D. Construction of confidence intervals and the testing of hypotheses concerning the regression coefficient (slope of the line) and the correlation coefficient

CPE COMMITTEE IN STATISTICS

Thomas R. Knapp, The University of Rochester
Bernard Okun, Brooklyn College, Chairman
Joel H. Pitt, State University College at New Paltz
Douglas Robson, Cornell University
Richard Zamoff, Queens College

TESTS AND MEASUREMENTS

Recommended credits: 3

The College Proficiency Examination in Tests and Measurements assumes a preparation equivalent to that offered in a one-semester college course. Approximately equal weight to the measurement of the following skills: Definitions and understandings, application and problem solving, and critical evaluation. Examination content was developed with reference to the outline suggested by the Committee on Pre-Service Preparation of Teachers in Measurement of the National Council on Measurement in Education.

Content

I. CLASSROOM TESTS
  A. Formulating plans and objectives
  B. Writing items: essay and objective
  C. Test administration
  D. Scoring and recording results
  E. Using scores and classroom grading procedures
  F. Tests as learning devices

II. STANDARDIZED TESTS
  A. Formulating plans and objectives
  B. Sources of information — reviews, manuals, etc.
  C. Test administration
  D. Achievement and aptitude tests
    1. similarities and differences
    2. important examples
  E. Evaluating results of standardized tests
    1. norms — local and other
    2. interpreting results to individual students and parents
  F. Comparison with teacher-made tests

III. STATISTICAL CONCEPTS
  A. Sampling methods and sampling error
  B. Scales and elementary assumptions
  C. Descriptive statistical methods
    1. univariate (distribution parameters)
    2. multivariate (meaning of correlations and factors)
  D. Reliability and errors of measurement

    1. mathematical methods
    2. experimental conditions
  E. Validity
    1. types of validity
    2. experimental conditions
  F. Item analysis

IV. **SPECIAL DEVICES**
  A. Interest inventories
  B. Personality testing
  C. Sociometric techniques
  D. Questionnaires — attitudes, socioeconomic status, etc.
  E. Anecdotal and cumulative records

CPE COMMITTEE IN TESTS AND MEASUREMENTS

Howard Berkowitz, State University College at Oneonta
Gordon Fifer, Hunter College
Richard Ripple, Cornell University
John Rosenbach, State University of New York at Albany
Sister Mary Gertrude, College of Mount Saint Vincent
Marvin Taylor, Queens College, Chairman

WESTERN CIVILIZATION

Recommended credits: 6

The College Proficiency Examination in Western Civilization is based upon the representative college course in western civilization. The modern period receives greatest emphasis with approximately two-thirds of the questions on the years after 1500, but there are questions on earlier periods as well as questions involving more than one period. Some questions measure factual knowledge only, but most will examine the candidate's understanding of basic historical concepts, of cause and effect, of significant relationships and trends. Still other questions will test his ability to analyze, interpret, and evaluate passages, maps, and cartoons — in short, his ability to use what he has learned.

Content

I. ANCIENT PERIOD
  - **A.** Civilization of the Ancient Near East
  - **B.** Rise and Spread of Greek Civilization
  - **C.** Rome From the Early Republic Through the Late Empire

II. MEDIEVAL PERIOD
  - **A.** Early Middle Ages in the West
  - **B.** Medieval Byzantium and Islam
  - **C.** The Height of the Middle Ages: Church, State, and Culture
  - **D.** Late Middle Ages

III. MODERN PERIOD
  - **A.** Early Modern
    1. The Renaissance: Italian and Northern
    2. Reformation: Protestant and Catholic
    3. Age of Discovery
    4. Commercial Revolution
    5. Rise of the Modern State
    6. Age of Absolutism
    7. Enlightenment
  - **B.** The Nineteenth Century
    1. French Revolution and Napoleon
    2. Industrial Revolution

   3. Europe between 1815 and 1848: Conservatism, Liberalism, Radicalism
   4. Europe between 1848 and 1914: Nationalism and Imperialism
   5. Social, Intellectual, and Cultural Developments

C. The Twentieth Century
   1. First World War and Aftermath
   2. Rise of Totalitarianism
   3. Second World War
   4. The Post-War World

Suggested Study Aids

The courses, *Western Civilization to 1815* and *Western Civilization: 1815 to Present,* will be offered by the Independent Study Program of the State University of New York (see page 14).

CPE COMMITTEE IN WESTERN CIVILIZATION

Evelyn Acomb, State University College at New Paltz
Robert Carlisle, St. Lawrence University
Elisa Carrillo, Marymount College
Raymond O. Rockwood, Colgate University, Chairman
Nancy Struever, Hobart and William Smith Colleges

Policy Statements

Policy Statements

The specifics of each institution's policy statement have been abstracted and arranged in tabular form on the following pages for ease of presentation. In addition to the specific points listed for each institution, the following general points apply to almost all higher institutions which have submitted policy statements to the State Education Department regarding the granting of CPE credit.

1. The applicant for credit should refer to the college catalog for a more complete and specific statement of policy regarding the granting of credit for performance on a CPE.

2. Formal application for CPE credit will be accepted by a college only when the individual matriculates or enrolls at the college. (This does not prevent a person from seeking counseling at the college prior to matriculation to determine how much credit he may be granted when he does matriculate.)

3. If the appl~~icant for C~~PE credit has not previously enrolled at the college it is understood that he must satisfy the entrance requirements of the college.

4. Generally the initial determination as to whether CPE credit will be granted by a college is made by the faculty of a specific department or division. In some cases there is further review by some other authority or faculty committee within the college.

5. CPE credit usually will only be granted where the content of the CPE matches or parallels the content of the college's course in that subject. If the CPE does not parallel a course the college may grant "free elective" credit within the limits of its specific program.

6. CPE credit will not be awarded in a subject below the level of work already attained by the student.

7. If CPE credit was awarded previously by another college this earlier credit will have to be reevaluated if subsequent transfer application is made to a second college.

8. In some areas, particularly the sciences and technical areas, a college will expect the candidate to demonstrate a degree of laboratory skill and experience.
9. For those CPE's which contain essay or problem-solving sections the college may request to review the candidate's specific answers in those sections. The State Education Department will send photocopies of the applicant's answers at the request of the college.
10. Credit granted for CPE is generally not included in a student's overall grade point average or in any quality point system.
11. The transcript of the student who has been awarded CPE credit will usually carry the notation that credit was granted for successful performance on a CPE.

POLICIES OF COLLEGES AND UNIVERSITIES REGARDING THE GRANTING OF CPE CREDIT

Legend: 1. Registrar 2. Dean 3. Director of Admissions 4. Admissions Committee
5. Advanced Standing Committee 6. Executive Committee or Academic Council
7. Appropriate academic department or division NS — Not specified by college

University or College	*Maximum CPE Credits Allowed*	*Minimum Acceptable CPE Grade*	*Application for Credit:* (See legend above)		*Fee*	*Specific Comments*
			Made to	*Reviewed by*		
Academy of Aeronautics ...	9	NS	NS	7	NS	
Adelphi University	NS	C	3	NS	None	Credit will not be awarded to special or non-matriculated students.
Alfred	32	C	5	5	None	
Auburn Community	30	C	3	NS	$10	If failed CPE is retaken, a grade of B is required for credit.
Bard	NS	NS	NS	6, 7	NS	Credit will not be given except in very special cases. Satisfactory performance on a CPE can gain exemption.
Bennett	NS	C	NS	6, 7	NS	
Bronx Community	12	B*	1	7	NS	*Grade of C can earn exemption. CPE credit may be granted for more than one course where the CPE is deemed equivalent to a multisequence of courses.
Brooklyn	NS	B*	**	7	NS	*Grade of C can earn exemption. **Apply to Office of Exemption Examinations.

Broome Technical Community	NS	NS	4	1, 4	NS	
Buffalo Bible Institute	NS	NS	NS	2	NS	
Cathedral College of the Immaculate Conception	NS	NS	NS	2	NS	
Catherine McCauley	30*	C	NS	2, 7	None	Credit will be provisional until student has satisfactorily completed 12 credits in residence. *For CPE grades of A, this minimum may be raised. Only 6 CPE credits will be allowed in the student's area of concentration.
Cazenovia	NS	NS	NS	2	NS	Course exemption, but not credit, may be granted for successful performance on a CPE.
City College (The)	32	NS	2, 7	7	NS	
College of Insurance	NS	NS	NS	2, 7	NS	
College of Mount Saint Vincent	18	C+	3, 7*	NS	$10	*Also by Academic Vice President.
College of Saint Rose	15	C	2, 7	NS	$5	Credit will be provisional until student has satisfactorily completed 15 credits in residence.
Corning Community	NS	NS	NS	2, 7	NS	
C. W. Post	30*	C	3	NS	NS	*No more than 9 credits may be used to fulfill the advanced requirements in a student's major area.

POLICIES OF COLLEGES AND UNIVERSITIES REGARDING THE GRANTING OF CPE CREDIT

Legend: 1. Registrar 2. Dean 3. Director of Admissions 4. Admissions Committee
5. Advanced Standing Committee 6. Executive Committee or Academic Council
7. Appropriate academic department or division NS — Not specified by college

University or College	*Maximum CPE Credits Allowed*	*Minimum Acceptable CPE Grade*	*Application for Credit:*		*Fee*	*Specific Comments*
			Made to (See legend above)	*Reviewed by*		
Dominican College of Blauvelt	*	NS	1	NS	**	*Depends on CPE taken. Request specific policy statement from college or from CPEP Office. **None, except for part-time student.
Dutchess Community	30	C	1	NS	NS	
Elizabeth Seton	*	C	1, 2, 7	NS	$5	*16 for A.A. degree, 12 for A.A.S. degree. Credit will be provisional until student has completed 1 term in residence with a minimum index of 2.0.
Elmira College	NS	C	1	NS	$15	Enrolled students must obtain approval before taking CPEs.
Fashion Institute of Technology	NS	NS	1	7	NS	
Fordham	12	B	2	NS	$15	CPE may be taken to resolve failures or deficiencies.
Fulton-Montgomery	15	NS	NS	2	NS	CPE must have been taken within 5 years of application for credit.

Good Counsel	*	B	2, 7	NS	NS	No credit will be awarded for CPE in field of concentration but exemption may be granted. *Maximum credits for adults, 60. For transfer students and recent high school graduates, 18.
Hamilton	30	B	2	6, 7	NS	
Hartwick	NS	C	2, 6, 7	NS	$15	
Hobart & William Smith ..	24	C	2, 7	7	$15	Credit will be provisional until student has satisfactorily completed 1 term in residence.
Hofstra	18	NS	NS	7	NS	
Houghton	32	C	2, 3, 7	7	*	Credit will be provisional until student has completed 15 hours in residence with at least a C average. Quality point average will include CPE grade. *50% of course tuition.
Hunter	24	NS	NS	7*	NS	Credit will be provisional until student has satisfactorily completed 30 credits in residence. *Also the Director of Instruction.
Immaculate Conception Seminary of Troy	NS	C	NS	7*	NS	*Also the Prefect of Studies.
Iona	16	C	1, 2, 7	5, 7	$15	CPE credits will be included in the student's quality point average.

POLICIES OF COLLEGES AND UNIVERSITIES REGARDING THE GRANTING OF CPE CREDIT

Legend: 1. Registrar 2. Dean 3. Director of Admissions 4. Admissions Committee
5. Advanced Standing Committee 6. Executive Committee or Academic Council
7. Appropriate academic department or division NS — Not specified by college

University or College	*Maximum CPE Credits Allowed*	*Minimum Acceptable CPE Grade*	*Application for Credit: Made to* (See legend above)	*Application for Credit: Reviewed by* (See legend above)	*Fee*	*Specific Comments*
Ithaca	32	C	NS	7	NS	Credit will be provisional until student has satisfactorily completed 1 year in residence.
Jefferson Community	30	NS	2	6	NS	
Juilliard School of Music ..	NS	NS	1	7	NS	The amount of credit allowed to the candidate for a Mus. B & BFA will be limited.
Keuka	45*	B	NS	2, 7	NS	Credit will be provisional until student has satisfactorily completed 1 year in residence. *Reported in quarter credits. A limit of 9 quarter credits is placed on the field of concentration.
King's (The)	32	C	NS	2, 7	$10	Credit will be provisional until student has completed 15 hours in residence with a grade point average of 2.0.
Kingsborough Community .	NS	C	2	7	NS	
Ladycliff	15	C	2, 3, 7	NS	$10	Credit will be provisional until student has satisfactorily completed 1 year in residence.

LeMoyne	NS	NS	NS	2	NS	
Long Island —The Brooklyn Center... (See also, C. W. Post College)	64	C	3	NS	NS	Credit will be granted only to adults 21 years of age or over. Credit will be provisional until student has completed 32 credits in residence with a quality point ratio of 2.0 (C).
Manhattan College	*	B	2	NS	$15	*One-fourth of total degree credits.
Manhattanville College of the Sacred Heart	15	B	2, 3	NS	*	Credit will be provisional until student has completed 30 credits in residence with a quality point ratio of 3.0 for one semester. No student may use credit through CPE to lighten the normal course load of 5 courses (15 credits) per semester. *One-half of the current college tuition fee per credit.
Marymount	30*	C	2, 3	NS	NS	*No more than six credits will be accepted in a student's field of concentration. Credit will be provisional until student has satisfactorily completed 1 year in residence.
Mater Christi Seminary	NS	NS	2	2	NS	
Mohawk Valley Community.	10	NS	7	6	$5	
Molloy Catholic College for Women	30	NS	1	7	NS	CPE credits will be granted only in English, foreign languages, mathematics, and the social sciences. Credit will be provisional until student has completed 1 year in residence with an index of 3.0 (B).

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5. Advanced Standing Committee 6. Executive Committee or Academic Council
7. Appropriate academic department or division NS — Not specified by college

University or College	*Maximum CPE Credits Allowed*	*Minimum Acceptable CPE Grade*	*Application for Credit:* (See legend above)		*Fee*	*Specific Comments*
			Made to	*Reviewed by*		
Monroe Community	16	C	2, 7	7	None	Credit will be provisional until student has satisfactorily completed 12 semester hours in residence.
Mount St. Mary	30*	NS	1	NS	NS	*No more than 9 CPE credits may be earned in major area.
Nazareth College of Rochester	NS	NS	2	6	$10	Credit will be provisional until student has satisfactorily completed 1 year in residence.
New York Institute of Technology	*	C	NS	4	$15	*A maximum of 15 credits toward a baccalaureate degree and 8 credits toward the A.A.S. degree. CPE credit will be provisional until student has completed 32 credits in residence with a quality point ratio of 2.0.
New York University School of the Arts	NS	NS	NS	NS	NS	Up to and including 6 points of elective credit may be granted for grades of C or better if the material covered by the examination is not equivalent to a course offered in the school.
—School of Commerce ..	NS	C	NS	NS	NS	

					In order to be considered for credit, the CPE must have been taken within 2 years of the date of application for credit.
New York University (cont.)					
—School of Education ..	NS	C	NS	NS	NS	
—School of Engineering and Science	NS	NS	NS	NS	NS	
Niagara County Community.	30	NS	3	NS	NS	
Niagara	30*	NS	2, 7	NS	NS	*For an associate degree a maximum of only 15 credits may be granted. No more than 8 CPE credits may be earned in major field.
Orange County Community.	30*	C	3	NS	None	*No more than 6 credits will be awarded in a single foreign language; no more than 15 CPE credits will be awarded in any one discipline.
Pace	16*	C	3**	3**	***	*No more than 8 CPE credits will be granted toward an associate degree. **Also Director of Challenge Program. ***Registration fees but not a tuition fee will be charged.
Paul Smith's College of Arts and Sciences	34	C	7	1, 7	$5	
Pratt Institute	12	C	1, 2	2, 3	NS	Credit will be provisional until student has satisfactorily completed 30 semester hours in residence.
Queens	NS	NS	NS	7	NS	

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Queensborough Community	16*	B**	4, 7	7	NS	*No more than a combination of 30 CPE and transfer credits will be granted to any one student. **A CPE grade of C may be granted course exemption but not credit. CPE credit will be provisional until student has satisfactorily completed 12 semester credits in residence. CPE credits granted by an earlier institution will not be acceptable.
Rensselaer Polytechnic	NS	NS	1	7	NS	
Roberts Wesleyan	32	C	1, 2, 7	7	$15	Credit will be provisional until student has satisfactorily completed 15 hours in residence.
Rochester Institute of Technology	36*	C	1, 3, 7	7	NS	*The maximum (36) is specified in quarter hours.

Rosary Hill	60	C*	3** 2, 7***	NS	NS	*Students receiving a D may be admitted to an advanced course, but no credit will be granted for the beginning course thus exempted. **Prespective students. ***Enrolled students.
Russell Sage	15	NS	NS	NS	NS	
St. Bonaventure	12	NS	NS	*	$5	*Academic vice president. Credit will be provisional until student completes 32 semester hours in residence with a minimum index of 2.00 (C).
St. Clare	30	C	2	NS	NS	Credit will be provisional until student satisfactorily completes one semester in residence.
St. John Fisher	66	C	2	NS	$15	Except in the laboratory sciences no conditions other than successful completion of a CPE will be required in assigning credit. A student who has unsuccessfully attempted a CPE may be eligible to receive credit by writing the same examination and achieving a CPE grade of C or better in any subsequent examination.
St. John's	*	C	3	5	NS	*Up to limitation imposed by the University residence requirement.
St. Joseph's College for Women	12	B	2	2, 7	$10	

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St. Lawrence	30	B*	2, 3	2, 7	NS	Credit will be provisional until student has completed 15 semester hours in residence with a quality point ratio of 2.0 (C average). *A CPE grade of C will be acceptable only if appropriate department so recommends and has the concurrence of the Dean.
St. Pius X Seminary	NS	B	4, 7	4, 7	NS	
St. Thomas Aquinas	NS	C	1, 2	NS	$5	Credit will be provisional until student has completed 32 semester hours in residence with an index of 2.5.
Siena	18	C	NS	7	*	*50% of the current course tuition.
Skidmore	12	B	NS	7	NS	CPE must have been taken within a five-year period preceding the student's application for credit.
State University of New York at Albany	NS	NS	NS	7	NS	For CPE's taken prior to admission, requests for credit should be made prior to completion of 1 semester in residence.

at Binghamton—Harpur College	NS	NS	3	2, 3, 7	NS	A maximum of 16 hours of nonequivalent credit will be allowed. (See general point #5 above.)
at Buffalo	*	NS	3, 7	7	NS	Credit will be provisional until student has satisfactorily completed 15 hours in residence. *If more than 16 hours of CPE credit are to be requested student should consult the Director of Admissions and Records.
College at Brockport	NS	NS	3	7	NS	
College at Buffalo	NS	C*	NS	NS	NS	*A CPE grade of D may earn admittance to an advanced course but no credit will be granted for the prerequisite course.
College at Cortland	12	C	NS	7	NS	
College at Fredonia	15	C	2	NS	NS	Credit will be provisional until student has satisfactorily completed 15 hours in residence.
College at Geneseo	40	C	NS	NS	NS	An enrolled student must have prior approval from the Division Director of the subject matter area concerned.
College at Oneonta	36	C*	NS	7	NS	*Additional evidence (i.e. oral examination) may be required if a CPE grade of C is submitted for credit. If student twice fails the CPE in a subject credit will not be granted for subsequent passing performance on that CPE.
College at Plattsburgh	NS	NS	NS	NS	NS	

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Agricultural and Technical College at Alfred	NS	*	2	2	NS	Credit will be provisional until student has satisfactorily completed 30 quarter hours in residence. *Divisional Dean of the curriculum in which the student is registered will decide the CPE grade required for credit.
Agricultural and Technical College at Delhi	12*	C	1,7	7	NS	Credit will be granted only to adults 21 years of age or older. Credit will be provisional until student has completed 45 hours in residence with an honor point index of 2.0 (C). *The maximum (12) is specified in quarter hours.
Agricultural and Technical College at Morrisville	32	C	NS	2	NS	
College of Agriculture at Cornell University	NS	NS	*	NS	NS	*Director of Resident Instruction.

College of Forestry at Syracuse University	NS	C	*	7**	NS	Credit will be provisional until student has satisfactorily completed 1 semester in residence. *Office of Student Services. **A CPE grade of C will earn credit *only* upon recommendation of the department of the applicant's major area.
Maritime	9	C	2,7	2,7	NS	Credit will be provisional until student has completed 2 semesters in residence with a quality ratio of 2.0 (C).
Upstate Medical Center	NS	NS	3	3,7	NS	CPE credit will be recognized if the undergraduate college has previously recognized it. If more than 12 CPE credits are requested, Office of Admissions will individually review such requests.
Staten Island Community	32	NS	2,7	7	NS	
Sullivan County Community	16	NS	3	2,3	NS	
Syracuse	30*	B	2,7	2,7	NS	*Including other credits by examination. A CPE grade of A or B may earn credit. Each examination can earn up to a maximum of six credits.
Ulster County Community	NS	NS	1	NS	NS	Credit will be provisional until student has completed 12 credit hours with a grade point average of 2.0.
Union	NS	NS	1	7	NS	

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University of Rochester (The)	NS	NS	3	7	NS	
Vassar	8	B	2	7	$25	Credit will be provisional until student has satisfactorily completed 30 hours in residence.
Webb Institute of Naval Architecture	NS*	B	NS	7	NS	*Only CPE's in chemistry and calculus are acceptable.
Wells	32	B	NS	7	NS	
Westchester Community ...	NS	C	NS	NS	NS	
Yeshiva	*	C**	NS	7	NS	*Exemption in several subjects may be granted but CPE credit will only be awarded for two subjects. **A CPE grade of D may earn exemption. No graduate credit will be granted but the student preparing for teacher certification may be excused from courses required for such certification on the basis of satisfactory CPE grades.

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